

Aviation News

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New Council Leadership: Lawrence D. Bell, left, outgoing president of Aircraft War Production Council, East Coast, whose Bell Aircraft Co. built the sensational jet-propelled plane, discusses Council matters with L. C. Goad, seated, right, the new Council president, and vice-president and general manager of Eastern Aircraft division, General Motors. C. M. Vandeburg, standing, general manager of the Aircraft War Production Council, looks on.

Bombings Hit Pre-Invasion Tempo

Progressive destruction and dislocation of Reich's economic and industrial system well on road to completion..... Page 16

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Lockheed Tightens Labor Rules

Industry to meet big plane quota; heavy increases in output likely with little addition to manpower in plants.....Page 12

VICKERS HYDRAULIC EQUIPMENT

Eases the Work OF GROUND CREWS



Ground crews have to keep 'em flying. Without effective ground crews to give first aid to battle-scoured and crippled ships, any air force quickly loses its punch. As air operations advance, these hard working crews go along—suck equipment into line, often dragging planes to provide necessary repair facilities.

Tough working—long hours under constant pressure—not much thanks and very little glory—but it's one of the most vital services.

Vickers Hydraulic Equipment eases the work of ground crews by making the tremendous demand on their time, energy and ingenuity. These simple, sturdy controls are easy to adjust, they take a lot of punishment before they need ground crew attention. When they do need servicing, the task is as simple as possible.

U.S. ground crews are doing a brilliant job and Vickers is proud to be able to help them.

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THE AVIATION NEWS

Washington Observer

NATIONAL SERVICE ACT—Unless there is an unexpected change of attitude on Capitol Hill, there will be no National Service Act, or labor draft, passed by this Congress. At the moment it appears it would be most difficult even to get the bill out of committee. Looking across many observances is that President Roosevelt, himself, does not actually want the act, or he would never have attacked so many conditions to its passage. There is a distinct feeling of disappointment among some members of Congress that the President did not recommend more definite labor legislation.

★

MANPOWER—The manpower situation, bleak in the first half of 1943, improved during the last half of the year, but cannot be said to be entirely solved. Manpower management, however, is solving the manpower problem in the view of WMC Executive Director L. A. Appley, who attributes the improvement to the development of an acceptable pattern for handling the West Coast plan, a difference in attitude as the point of conversation toward the manpower program and increased effectiveness of the U. S. Employment Service. Labor, management, communities and government agencies have decided to manage the situation, with resultant improvement. It appears that aircraft and shipbuilding services will remain tight and so activity in the Pacific theaters, strain on manpower on the West Coast will intensify.

★ ★ ★

NEW PATROL BOOMER NEEDED—Some military men in Washington are saying that there is a need for a new type over-union patrol bomber, which probably will not be produced for the war unless facilities last longer than is now expected. The suggested design is the opinion of some experts would cruise out to its area the first night, patrol at high speed during the day, and land back to base the next night. Some experts hold there is a lot of "negative" opinion to be done—making sure the enemy isn't there.

★ ★ ★

TOWPLANE VIEW—The Army's glider program is on the wing, as emphasized by the accompanying spectacular two-plane view of the Army's big, new 42-place CG-12 glider at the end of a 300-foot nylon tow rope, being towed from Wright Field to the Clinton County Air base, at Wilmington, Ohio, sub-base of Wright Field. The picture was made from the tail turret of a bomber which provided the towing power. Built at about one-tenth the cost of an

airway transport, the big glider can carry more load than a twin-engine Douglas airliner, and is regarded as some improvement in design over



the smaller standard 15-place CG-4A glider. Both were designed by Francis Turner, Vought chief engineer.

★ ★ ★

TRUMAN COMMITTEE CRITICISM—The Truman Committee has had rather bad luck—been its point of view—in its choice of new airplanes to criticize in recent public reports. Martin's B-24 "Marauder," against which four charges were made (disproven, poor performance on one engine, difficult maintenance and inability to use restricted altitudes) has refuted all of them, according to front command reports. In addition, Curtiss-Wright's SB2C "Helldiver" has been acclaimed by the Navy as one of its three-plane team of star performers.

★ ★ ★

DOING RANGER TO MARTIN—It now appears that the proposal to put Boeings two-engine Ranger flying boat into production at Martin is off. For one thing, the Baltimore plant is still producing the Monomoteur in volume and with the Navy's recent order for 38 flying boats of the record-breaking Ranger type, the plant probably won't be able to handle any more work at present.

Yesterday wouldn't get much of a reception **TODAY**



TOMORROW

Yesterday's radio would fall far short of doing justice to today's broadcasts. Few of us would have the patience to fool around with numerous dials as we could have the patience to fool around with numerous dials of a station tuned in properly. Improved Electrical Insulating Materials have made an important contribution to the performance of today's radios, whether in use by our Armed Forces or by civilians.

The C-D Laboratory has made it unnecessary for Electrical and Design Engineers to "fool around" experimenting with numerous types of electrical insulating materials. C-D has developed grades and types of electrical insulating materials to meet specific and special problems. The "know-how" accumulated through solving thousands of electrical insulating problems is at your disposal to help you solve the question "What Insulating Material?"

(C-15)

POWER FACTOR VALUES IN DIRECT Laminated Phenolics*

Power factor may be considered an indication of the stability of the insulating material in operation as a check of the uniformity of operation. In some cases it is desirable to have low power factor, while in others it is not so important. In all cases, however, it is a useful means to indicate purity of composition and useful life under electrical stresses, as well as the efficiency of the insulation.

POWER FACTORS FOR STANDARD DIRECT GRABES



One of the standard test methods for power factor is called the "Thomson Circuit, Resonance Method" method. Measurements are at 100 cycles per second. Typical results of a stable high-frequency generator, a vacuum tube with meter, decade resistance and a standard precision variable air condenser. Below, Mr. Ford is seen placing this equipment.



* Excerpted from an article on POWER FACTOR TESTS by J.B. Ford in the Continental General Laboratory Brief. A copy of this complete article will be sent on request.

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Bomber Output Rises Sharply As Willow Run Gets Under Way

Ford officials mum on plans to enter cargo plane field; production under way on third thousand Liberators.

By ALEXANDER MCKINLEY

If Henry Ford takes his projected cargo-plane building program seriously, about which there seems to be some doubt in Detroit, and can build simpler cargo planes as fast as he is turning out four-engine heavy B-24 Liberator bombers, he has probably made all the cargo planes the nation will need, and then some.

The world's biggest bomber plant at Willow Run, which has taken a lot of looking around in its early stages, is now rolling the Liberators out the door at a rapid rate, and besides that is sending virtually complete subassemblies of additional bombers out in large quantities by truck daily, for completion at other assembly plants in the southwest.

Pace Slipped Up—The Ford Co. announced recently that a second thousand bombers had been down away, at a production rate much faster than the first, and that a third thousand is now on the way. The first thousand was completed in November.

Going through the Willow Run plant today, as production is really beginning to roll, is an experience in application of automotive mass production methods to manufacture of airplanes.

Feed Methods—Clean overhead designs of the plant make it possible for traveling cranes to "run wild" above the production workers, picking up huge subassemblies and transferring them from one station to another, while everyone else also is widely used. Examples of the Ford way to turn out a bomber include a huge inspection rolling machine which performs eleven operations in less than an hour, on the backbone of the airplane, the center wing section, rivet-making machines to assure a steady flow of

these essential items, spot-welding, wire welding and pump riveting machines, huge stamping machines which stamp out engine nacelle parts, and other components, an impressively continued overhead fueling "bridge" which lets down gasoline hose to the complete bombards at the end of the final assembly line, to give them their first flight.

Fuel Service—Incidentally this fueling bridge might be an idea for future airports, as a time-saver in fueling planes, which could then arrive and get their gas in both wing tanks at once, while passengers were unloaded and cargo handled.

The Ford Co., now in a position to talk back to its critics of earlier days, points out that the Willow Run plant is now producing "several hundred" bombers a month and is nearing the projected peak, having

passed its fourth consecutive month ahead of scheduled production.

Twisting Cost—"Early critics claimed that our looking out several times that of a comparable plant using old-line aircraft production methods," a Ford spokesman said. "That was true. But we produce bombers with the total cost of our looking every few days now at Willow Run. The original small additional investment has paid for itself many, many times in terms of getting greater numbers of heavy bombers just when heavy bombers are most important."

Largest B-24 Plant—Willow Run is now admittedly the largest plant supplier of four-engine B-24 bombers to the Army Air Forces. There were five times as many B-24s delivered during the last quarter of 1943 from Willow Run as during the first quarter. Many other Ford Michigan plants are contributing to the B-24 program, including the Bugey, Highland Park, and Lincoln plants, while many of the smaller bomber assemblies and parts jobs are subcontracted. Less than three years ago, the plant was non-existent. Clearances for the airport was started in March 1941, and plant construction began two months later. Planes make bigger than the B-24.



Ford Starts Its Third Thousand Bombers—Ford's bomber plant at Willow Run is now working on the third thousand Liberators. This view shows assembly line technique in the installation of Pratt & Whitney Double Wasp engines.

test wing span. Liberators can be manufactured in the Willow Run plant, and the L-300-acc aircraft can be expended in three directions. It has six wings, each 164 feet wide and from 4,370 feet to 6,220 feet long, and a huge hangar which can house 20 B-24s. Another hangar is under construction.

Cargo Program—In considering Ford's cargo plane plant it should not be overlooked that it is also one of the largest manufacturers of cargo gliders for the Army, at his Egan Mountain, Mich., plant, having experience in building both the CG-4, a 10-place glider, and the larger CG-13 cargo glider. If cargo gliders come into their own, Ford would be in an ideal spot to turn out a transport twoplan, which would be mated in windloading, etc., to his cargo gliders, a combination which does not now exist, but which most glider experts agree will be necessary before bulky aircraft cargo glider operation is attained.

Moreover, Ford is also a main producer of Pratt & Whitney Double Wasp 2,000 hp engines at his Rouge plant, and a backlog of manufacturing experience in these large engines, will be another valuable asset in his post-war planning.

U. S. Aid to Reds

The Russian Air Force has received nearly 100 airplanes from the United States under lend-lease, according to Leo T. Crowley, foreign economic administrator.



PERSONAL AIRCRAFT PROPONENTS:

Members of the Personal Aircraft Committee of the Aeronautical Chamber of Commerce, made announcements of the aircraft manufacturing industry, are shown during a recent meeting in Washington at which they discussed the future of civilian flying. Left to right, around the table, are: Carl Wooten, sales manager, Beech Aircraft Corp.; Harry Rocklin, general counsel for the Chamber; Don Flower, sales manager, Cessna

Shipments to the Soviet Union during November amounted to \$308,000,000, more than in any month in the history of the lend-lease program. Total exports to Russia since the beginning of the program now total \$1,897,534,000, more than half of which consisted of grain, automobiles, planes, tanks, motor vehicles and other kinds of military equipment. Lend-lease shipments have kept pace with the racing tempo of the Red Army's advance.

Policy on Naming Warplanes Adopted

Joint Allied aircraft group agrees on long-range program

Designed to ensure uniformity, simplicity and meaning in the names of American-built warplanes being used by United States as well as United Nations air forces, has resulted in adoption of a long-range policy for naming military aircraft by the Joint Aircraft Committee, membership of which includes American and British military and naval services.

One of the functions of the committee is to standardize all matters pertaining to military aircraft. Standardization of names also will streamline the functions of various types of aircraft. This particular function is handled through a subcommittee.

Names Aligned—The committee aligned most of the currently pop-

ular names for warplanes, except in a few instances where conflict necessitated further discussion.

Bomb's new big bomber, the B-24, was designated Superfortress. The subcommittee on naming of aircraft will consider all applications for new aircraft and for purposes of brevity, names submitted, the members say, should consist of but one word, and superficially compounded names should be avoided.

Other terms of the new policy are:

Names will be assigned only in those types of aircraft which have reached the production stage and to those which have been previously produced and exist in considerable numbers.

Names recommended will not duplicate or permit confusion with names currently in use by the Army, Navy, Coast Guard or any Allied.

Each basic model of aircraft will retain the name originally assigned regardless of the manufacturer thereof or the operational uses to which it may subsequently be put.

All aircraft in a given series will have in a basic type will retain the same name assigned, for example, P-50A, B, C, D—A-1, A-2, A-3, A-4, A-5—Wendell.

It was explained that, in connection with same names currently in use, the British will continue to use names which differ from those used by United States craft. This is necessary, it was said, because the British use the popular names for warplanes in their official communications.

Names currently in use, as approved by the Committee are:

POWERS	Model	Type	Approved Name
Grumman	W-41	Wing	Warrior
Grumman	W-42	Wing	Warrior
Grumman	W-43	Wing	Warrior
Grumman	W-44	Wing	Warrior
Grumman	W-45	Wing	Warrior
Grumman	W-46	Wing	Warrior
Grumman	W-47	Wing	Warrior
Grumman	W-48	Wing	Warrior
Grumman	W-49	Wing	Warrior
Grumman	W-50	Wing	Warrior
Grumman	W-51	Wing	Warrior
Grumman	W-52	Wing	Warrior
Grumman	W-53	Wing	Warrior
Grumman	W-54	Wing	Warrior
Grumman	W-55	Wing	Warrior
Grumman	W-56	Wing	Warrior
Grumman	W-57	Wing	Warrior
Grumman	W-58	Wing	Warrior
Grumman	W-59	Wing	Warrior
Grumman	W-60	Wing	Warrior
Grumman	W-61	Wing	Warrior
Grumman	W-62	Wing	Warrior
Grumman	W-63	Wing	Warrior
Grumman	W-64	Wing	Warrior
Grumman	W-65	Wing	Warrior
Grumman	W-66	Wing	Warrior
Grumman	W-67	Wing	Warrior
Grumman	W-68	Wing	Warrior
Grumman	W-69	Wing	Warrior
Grumman	W-70	Wing	Warrior
Grumman	W-71	Wing	Warrior
Grumman	W-72	Wing	Warrior
Grumman	W-73	Wing	Warrior
Grumman	W-74	Wing	Warrior
Grumman	W-75	Wing	Warrior
Grumman	W-76	Wing	Warrior
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Grumman	W-78	Wing	Warrior
Grumman	W-79	Wing	Warrior
Grumman	W-80	Wing	Warrior
Grumman	W-81	Wing	Warrior
Grumman	W-82	Wing	Warrior
Grumman	W-83	Wing	Warrior
Grumman	W-84	Wing	Warrior
Grumman	W-85	Wing	Warrior
Grumman	W-86	Wing	Warrior
Grumman	W-87	Wing	Warrior
Grumman	W-88	Wing	Warrior
Grumman	W-89	Wing	Warrior
Grumman	W-90	Wing	Warrior
Grumman	W-91	Wing	Warrior
Grumman	W-92	Wing	Warrior
Grumman	W-93	Wing	Warrior
Grumman	W-94	Wing	Warrior
Grumman	W-95	Wing	Warrior
Grumman	W-96	Wing	Warrior
Grumman	W-97	Wing	Warrior
Grumman	W-98	Wing	Warrior
Grumman	W-99	Wing	Warrior
Grumman	W-100	Wing	Warrior



Vought "Corsair" in Royal Navy. British aircraft are shown loading the guns of a Royal Navy Vought Corsair fighter at a United States Naval Air Station in New England. In addition, fighters of the Fleet Air Arm are making good battle use of the new Curtiss Wildcat and Grumman's Avenger torpedo plane and Hellcat fighters in considerable numbers.

British Navy Flyers Train on "Corsairs"

Third of fleet carrier gun instruction in U. S. schools, Admiralty reveals

The British Navy reveals that nearly one-third of all British Navy flyers are trained and equipped in U. S. Navy training schools with American-built craft. Radio is the only part of the planes that are modified for the British.

In order that the flyers may be completely familiar with their craft, Vice Admiral John R. Towson, former Bureau of Aeronautics Chief, and now Commander, Air Force, Pacific Fleet, and Vice Admiral Sir Arthur Lyster, then Fifth Sea Lord, worked out the arrangement of training the flyers here early in 1944.

Ground Schools—In addition, there is a technical training program for ground crews on maintenance of U. S. Navy type planes. Capt. Casper John, British Naval Attaché for Air, said ground crews were being trained at Wright Service School, Patterson, N. J., Pratt & Whitney Service School at East Hartford, Conn., Grumman Aircraft School, Bethpage, L. I., Chance-Vought division of United Aircraft, Stratford, Conn., Hamilton Standard Propeller School, Westbury, N. Y., Naval Air Station, Norfolk, Va., Naval Air Station, San Diego, Naval Air Technical Training Centers at Chicago, Norpox, Ohio, Memphis, and Jacksonville, Fla.

Under lend-lease the British Navy uses Grumman's Avenger, torpedo planes, Grumman Hellcat and

Wildcat fighters, Vought Corsair fighters and Curtiss Redwings. In addition, the Stinson division of Convair builds the Reliant, a radio and navigation transfer for the British.

Train Under U. S. Officers—While in training, the students are under the administration of the U. S. Navy commanding officer at their station. Each station has a senior British naval officer, however, who is a resident flying instructor and acts as an adviser to the commanding officer.

One advantage of this program is that it saves many strikes in England five to lose the 4th Air Force as well as the RAF, Capt. John pointed out.

The British cadets train in this country from 12 to 14 months and return to Britain with their own aboard aircraft carriers built for Britain in the U. S.

Capt. John said he thought two engine fighters would soon be used frequently from carriers, and indicated that night fighters were being based on aircraft carriers.

CAA Jobs for Vets

Charles I. Stanton, Civil Aeronautics administrator, describes employment opportunities for disabled veterans in the Air Traffic Control and Communications divisions of CAA. Encouraging the chances for men physically incapacitated to return to their former jobs, Stanton's announcement mentioned honorable discharge, Civil Service qualifications, and mental ailments as requirements.

CAA also gives details of the

third Inter-American Aviation Training Program, which the United States offers three types of aeronautical scholarships to citizens of 14 of the other American republics, through CAA and the State Department. Types are for aviation mechanics, pilots and aeronautical technicians. Training comes from private contractors in this country under supervision of the War Training Service. Entrance examinations will be given in February.

Lea Bill's Progress Slows Down to Halt

Hearings cut short and measure believed virtually dead.

By BLAINE STUBBLEFIELD

After more than a year of effort by its sponsors, the Lea bill reviving the Civil Aeronautics Act seemed farther from enactment last week than ever. House Rules Committee resumed hearings preparatory to putting it on the House calendar for debate, but cut them short, subject to call of the chairman. This could be equivalent to tabling the measure. The House Interstate and Foreign Commerce Committee, which reported the bill to the House, can get unanimous consent to have it re-committed for rewriting.

Rep. Clarence Lea, chairman of the House committee, is reported to have said privately that if sponsors cannot get what they want in this bill, they might as well start working a new one. Other close observers say they believe the bill is as good

as dead, but no competent source would make predictions.

► **Control Support Lacking**—Lack of united support by the aviation industry itself is said to be a major cause of the impasse. A sprouting of sponsors for the Air Transport Association, one of the measure's most ardent proponents, National Aviation Trades Association, Personal Aircraft Department of the Aeronautical Chamber of Commerce, National Aeronautic Association, National Association of State Aviation Officials, and for the air underwriters, at Washington two weeks ago, resulted in a majority vote against support of the bill. The meeting was marred by persons opposing the Lea bill.

Leading the opposition was the State Official group, which contends that local government should have economic and operational regulatory control of intrastate airlines, of airports and zoning, and of state taxation of aviation properties within the State. This policy is supported by "State's rights" politicians in both parties and by large numbers of state job holders.

► **Labors Aroused**—Railroad and steamship lobbies are accused of inciting distrust among the various aviation groups. If they did, all agree that their job was fairly easy. The distrust is quite apparent, and some highly placed observers say it is stagnant. Failure of the measure to unite on a measure vital to their interests reveals, they say, that private flying, the air training industry, the air transport industry, and aircraft manufacturing have progressively fewer interests in common. If this is so, the sooner it is admitted the bet-

ter, in their opinion. Perhaps there is no good reason, they say, why these groups should be under the same law and the same administrative agency just because they happen to fly airplanes.

In fact, it is pointed out that when private flyers are able to get large-range airplanes, and aids which will make them usable with regularity, personal flying will be in competition with the airlines, just as automobiles are competing with the railroads.

► **Bill Slowed Down**—The opposition has slowed the Lea bill down to a walk, and the system of this accomplishment is a running story, different from day to day. Most recent inside move was by the steamship companies, for when the Maritime Commission was asking interference from Admiral Henry S. Land, Chairman of the Senate, a letter to the Rules Committee favoring steamship company operation of airlines, and the House Merchant Marine Committee held hearings on the question. The result was that, last week, when the Rules Committee held its brief session, every one of the members, except Chairman Adlai J. Sabath, favored a Merchant Marine air program. Some members of the Maritime Committee attended the meeting.

► **Confusion**—It didn't seem to matter that the question of participation by airlines in interstate air transport is no longer in the Lea bill, but has been set aside in another bill, H.R. 3422, on which hearings have not been scheduled. Confusion surrounding air legislation is deeper now than it ever was in the years before the act of 1936 was passed. That the major issue will not have been resolved, even if the Lea bill were passed.

Rep. Charles A. Waverton (R-N.J.), a member of the Interstate and Foreign Commerce Committee, only witness during the Rules Committee's short session last week, expressed several points of opposition to the bill, most of which was new. It was understood that Mr. Waverton was merely taking part in the formality of tying up the measure for the opposition.

Stall Indicators

Development of stall indicators had been disclosed by the Technical Development Division of the Civil Aeronautics Administration, with the promise that they will be available soon for commercial use.

The indicator works on a warning principle, with an air-activated bu-



NEW "MUSTANG" GOES FASTER AND FARTHER:

The improved North American P-51 Mustang, which speed, longer range, higher service ceiling and still remains its characteristics as fighter-bomber and escort

ton sounding a horn to caution the pilot before the point of stall.

In one drive a wire forced upward by air flow pushes the button at the lead edge of a wing. As the air changes of pressure at the lead edge actuates a diaphragm

which pushes a button. The first was developed by W. A. L. Gurley Co. of Troy, N. Y.; the second by Wayne University of Detroit. CAA says "The trick is to get the air to push the button before the airplane stalls."

ponent. Mowerick also was elected chairman of the SWPC by the board of directors.

WPA has delegated authority to grant specific authorizations to deliver magnesium products going into aircraft and aircraft equipment to the Aircraft Scheduling Unit of the Aircraft Resources Control Board. Reiteration, ASU has recommended grants to WPA.

► **Stockpiled**—Procedures governing the allocation and use of magnesium and magnesium products and the disposal of magnesium scrap have been simplified by WPA. Foundries will be permitted to accept the return of spent or rejected castings of their own manufacture without approval of WPA.

WPA has clarified controlled material orders and defined when a change in an order constitutes placement of a new order and when it does not. Generally, any change in an order constitutes a reschedule, but when the change necessitates elimination of the producer's production schedule to the extent of interfering with production, WPA has changed the rules.

► **Order Rescheduled**—WPA's Lamination Order L-342, which governed sales, transfers and rentals of all second-hand aircraft of 500 hp or less, has been revoked. The order was administered by WPA in cooperation with the Civil Aeronautics Administration and was a wartime move to keep track of all light planes and Link trainers in case they were needed by the Army or Navy in their training programs.

► **Defense Plant Corp.**—Brewer Aeronautical Corp., Long Island City, N. Y., has completed two contracts with the Defense Plant Corp.

FEDERAL DIGEST

NWLB Returns Job Grievances To Plants, Unions for Settlement

Amends directive of last March regulating considerations of certain disputes; summary of work in U. S. and war agencies.

Responsibility for settlement of individual grievances under the existing machinery in contracts has been returned to the seven West Coast aircraft companies and the three unions under the jurisdiction of Division 10 of the NWLB. West Coast Aircraft Committee An order was issued by the Board last week. The division's headquarters are in Los Angeles.

The Board's order amended its directive of Mar. 4, 1943, establishing the West Coast Aircraft Committee, to provide that no grievances of the type now being accepted by Division 10 will be accepted by it after the expiration of 30 days from the date of the amended order. If such grievances have not been finally disposed of at the end of 90 days, they will be returned to the parties for settlement through their existing grievance procedures.

► **Individual Grievances**—The amendment affects individual griev-

ances as to whether an employee should be upgraded within his classification or to another classification. Individual problems will now be worked out by the parties themselves and many now pending before the committee will fall to the companies and unions to work out through their contract agreements.

Companies affected are Consolidated, Vultee, Douglas, Lockheed, North American Aviation, Northrop, Ryan Aeronautical, and Vega. The unions are United Aircraft, Aircraft and Agricultural Implement Workers of America, CIO, the International Association of Machinists, AFL, and the National Union, United Aircraft Workers of America, Independent.

► **Mowerick Named**—Murray Mowerick, of San Antonio, has been appointed vice-chairman of the War Production Board in charge of the Southern War Plants Corp. Chairman David Nelson announced the ap-



BLIMP VIEW OF CRASH SURVIVOR:

A blimp on coastal patrol found this survivor of a B-24C clinging to the deserted plane. The shipwreck dropped a life raft and emergency ration and food nearby until a Coast Guard cutter appeared. The pilot of the plane failed to surface after the crash.

One provides additional equipment for a plant in Bucks County, Pa., to cost \$48,000, an over-all commitment of approximately \$1,265,000. The other contract calls for additional equipment at a plant in Stevens County, N. Y., to cost \$240,000, resulting in an overall commitment of \$1,505,000.

North American Aviation has increased its contract with DPC by \$1,450,000 for plant and equipment additions at Inglewood, Calif. Over-all commitment is \$9,080,000.

► **Higgins Contract**—DPC announces an increase in its contract with Higgins Aircraft, Inc., New Orleans, La., to provide additional facilities at a plant in New Orleans at a cost of \$2,750,000, resulting in an over-all commitment of \$29,800,000.

Tube Turna, Inc., Louisville, has increased its DPC contract by \$145,000, for additional equipment at a plant in Jefferson County, Ky. Over-all commitment totals \$2,000,000.

WLB denied the request of the United Automobile Workers, CIO, for increases in the rates for approximately 1,500 workers at the Nash-Kelvinator Corp. plant at Grand Rapids, Mich., to bring them up to rates at the Lansing, Mich., plant. **Lumber Prices**—Going prices for several grades of yellow poplar, sweet gum and water tupelo logs, established early in 1943 when the demand for aircraft veneers and lumber was heavy, have been revived by the Office of Price Administration. This will reduce the ceiling for aircraft grade logs to the level of those provided for clear and select grade logs.

CIAA has evolved a price list for all second-hand light planes and filed a ceiling price. CIAA now merely requires owners or purchasers to record used plane sales by filing with the CIAA copies of all

bill-of-sale and relinquish certificates of registration endorsed by the purchaser.

► **Plywood Committee**—OPA has appointed a five-man Douglas Fir Plywood Manufacturers Industry Advisory Committee, to counsel on pricing problems. Serving will be Chas. Brown, vice-president of U. S. Plywood Corp.; E. W. Daniels, president of Harbor Plywood Corp.; Thomas B. McIntire, vice-president of M. and M. Woodworking Co.; J. H. Robinson, president of Robinson Manufacturing Co.; and Herman Taveler, president of Northwest Door Co.

Tough, laminated Douglas fir plywood stock, is used in manufacture of airplanes, boxes and crates for engine and aircraft parts among other things, OPA said.

Effective selection of thousands of women in war plants and their adjustment in the new jobs are best obtained by a system of personnel management geared to women's needs, according to a recent study by the Women's Bureau of the U. S. Department of Labor. The Bureau's study is told in a pamphlet, "The Woman Crusader in War Industries—An Effective System," and may be obtained from the Bureau.

WEST COAST REPORT

Lockheed Tightens Labor Rules; Firms to Meet Bigger Plane Quota

Heavy increases in output soon likely with comparatively small increases in manpower; progress slacks on new helicopters.

By SCHEER BANCOS

LOS ANGELES—First indication that the nation's aircraft factories soon may shed their legions' path is the labor market at work at Lockheed Aircraft Corp. in Burbank, Calif.

Due largely to expert labor utilization, Lockheed today is in the unique, and significant, position of being able to release manpower while facing a year of sharp production increases.

► **Replenishment 39 Percent**—The company is hiring no more than 39 percent of the number of employees lost through "turnover." The significant thing is that Lockheed has removed, for the moment at least,

its labor relations hot gloves.

If the shift of a worker is a short-handed production section is desired, he accepts the change—or a discharge slip. Absentees no longer laugh it off. A day or week-end off for that tired feeling or recovery from a hangover no longer goes. There is a warning. A dismissal on a report throughout Lockheed plants there is a tightening up and toughening up on all factory regulations.

► **Harqueuses**—Consolidated Vultee and Ryan Aircraft in San Diego, Northrop in Hawthorne, North American in Inglewood, and Douglas in Santa Monica anticipate

steady increases in employment as the year progresses and military orders increase. Candidates may have to go outside the San Diego area to recruit.

Douglas, because of design changes requiring a heavy initial investment in man-hours per plane, will need the greatest number of new workers and a high labor priority for Douglas may be expected. Lockheed's present available labor position might be altered by future warplane orders not anticipated currently.

► **DESIGNS STABLE**—Thanks to the decision of military authorities last year to stick to standardized designs of fighters and bombers, Western factories should have little difficulty in meeting heavy production increases with comparatively small increases of manpower. They've been building the same planes for so long that they can cash in, production on their sharply descending "learning curve."

Gradually, the learning curve starts at a high level of man-hours per plane. Eventually, as workers learn their trade, the curve begins a steep drop. By the time the planes have been produced, workers will be building planes five times as fast as they did during production of the first 50 ships. In Western factories, seven workers produced as much in 1943 as 70 were able to produce in 1942.

► **New Helicopters**—Engineering bugs and manpower shortages as well as difficulty in obtaining machine parts have kept on the ground all



CONVAIN RECRUITS WOMEN WORKERS:

Caracas shoppers in San Diego swarm up to store tenders to watch women employees of Consolidated Vultee Aircraft Corp. working as parts for Liberator bombers during a "Women in War Work" campaign. This display was set up as a complete miniature factory department and bomber parts actually were turned out.

West Coast helicopters that were nearing completion last fall.

Mid-spring now is the best time for first flights of Western "vipers" New rotor design was indicated for one, which as a recent Los Angeles test was able to travel forward and backward—but was not able to get off the ground.

that until success of the European invasion was established, American industry would be kept at work producing war goods. That policy was echoed by Arthur D. Whitehead, director of the Office of Civilian Requirements, J. A. King, WPA program vice-chairman, and a host of lesser officials suddenly aware that a definite civilian production policy had been agreed on.

► **Conference**—The WPA Chairman summed it up best when he met a dozen of the nation's industrial leaders in his office to talk over reconversion problems. "With our biggest battles coming up," he said, "we emphatically do not have the time to divert any substantial quantities of materials, labor or facilities to less essential, civilian production. There certainly cannot be any return to volume production of less essential goods until the war picture is a great deal clearer."

This statement closed up any doubt that seemed over whether or not war production was still the foremost job. With a new rule of thumb—to continue to produce material until the success of the invasion is beyond doubt—American industry this week found that it could not slow down until its war schedule was not be disturbed by reconversion plans.

► **False Out**—There was also no

Industrial Demobilization Program To Await Turn of Invasion Tide

Congress expected to ignore Baruch-Hancock contract termination clause and concentrate on statutory framework for return of plants to peacetime basis.

Three facts emerged this week from the show that has surrounded the subject of contract termination and industrial demobilization. These are:

► There will be no major reconversion or lifting of restrictions from war orders until after the Army and Navy leaders are confident of the way the invasion is going.

► Chairman Donald M. Nelson, of the War Production Board, wants to direct the reconversion from its own, and is now taking over the reins on every occasion where he

can do so, in an effort to establish himself as reconversion boss.

► Congress will ignore the Baruch-Hancock contract termination clause and continue its efforts to provide industry with a statutory framework for demobilization rather than a set of administrative orders.

From every source in the government there was evidence that as early return to the production of durable goods for civilian use is urged, and that the War Production Board's leadership is driving this message home, and finally acknowledged



NEW CARRIERS CONVERTED FROM CRUISERS:

First photographs of any of the Navy's six \$169.9-million carriers of the Independence class. All were originally planned as cruisers, and retain the hull-in speed of

cruiser types. Tacked with the new 35,000-ton Essex class carriers, they checked Japanese bases all the way from Wake to Rabaul.

doubt this week but that Mr. Nelson was regretting the fact that last summer he had placed practically all of his authority on the shoulders of his Executive Vice-Chairman, Charles E. Wilson, and then quietly dropped from public view and the nation's headlines. Painfully aware of the loss in prestige which he suffered when he turned over the entire aircraft and other important warplane programs to Wilson, the WPB chairman is now frantically striving to reestablish himself as a productive person.

For several weeks now, Nelson has been in the forefront of all WPB actions. Announcements of relatively minor interest which formerly would have been made in the name of a division director are now going out in the name of the chairman. Although he continues to direct the aircraft program, through the Aircraft Production Board, Vice-Chairman Wilson is being rapidly relegated to the background and his name appears seldom in WPB official press releases. Probably the most indicative of all of Nelson's recent actions was that concerning to Washington foreign industrial leaders to discuss production problems with him. As the instructions left his office, Nelson promptly announced that a similar meeting with leaders of organized labor was to be held shortly. These meetings left little question in the minds of most Washington observers

ers but that Nelson was making full plans to take over the reconstruction job and, in effect, had already started.

Termination—Measureable. From Capital Hill came little indication that the war control termination clause announced last week by Bernard M. Baruch and John Hancock was as real as that name. Although there were 34 measures introduced on the subject of termination, disposal of facilities, and disposal of surplus materials, Congress moved rapidly to complete its omnibus termination bill which will spell out by statute the entire reconversion program.

Four major Senate committees are understood to have agreed to work out a joint bill, and reports on this measure is expected soon. The committees include the Senate Small Business Committee, the Post-war Economic Policy and Planning Committee (headed by Senator George), the Senate War Investigating Committee (jointly chaired by the "Warren Committee"), and a Senate Military Affairs subcommittee.

New Agency—Director James F. Byrnes, of the Office of War Mobilization, and Baruch and Hancock have all been heard by the various Senate committees and it is understood that the Senate version of the uniform control termination clause will not differ vastly from that devised by Baruch and Hancock.

One new subject for speculation was introduced last week when President Roosevelt, in his annual message to Congress, slightly referred to the creation of machinery for the "permanent" management of Government property. Although he did little more than voice the hope that such machinery could be "established in the very near future," the President's remark was quickly grabbed up by Government officials who felt that it may be a forerunner to an announcement by the President designating an agency—or setting one—to handle the disposition of Government property.

Leadership in the reconversion program, which began with WPB, then passed quickly to Congress and then to Baruch, now seems to have returned to Congress. Despite this rapid shifting of authority, those who claim to be in the know are keeping one eye cocked on the White House. There is a man there, they recall, who also likes to run things.

Ask Timely Publicity

West Coast public relations officials ask equal "breaks" as news released by services.

Pacific Coast aircraft companies continue to break new records each month to get warplanes to the front, but their officials look forward to the time when they get publicity breaks as favorable as eastern plane producers.

Under the surface, public relations men in the west are seeking at being ignored frequently, or more often discouraged by Washington, when they seek to follow up technical accomplishments.

Security Rules Vary.—Security regulations on interpretation vary in the East and West. Announcements are made in Washington a few days or hours after companies involved are told nothing will break for weeks. Coordination among security efforts, both on the Coast and with Washington, is often lacking, it is pointed out.

Although Northrop cannot yet describe its new Black Widow P-61, identified to more than 200,000 as a new low overland bomber in Army-Navy shows in Los Angeles, on Jan. 31, Captain Ray of the Northrop comic strip was ordering, "Wheel out my Black Widow. I'm going on a raid." On Jan. 14, Los Angeles residents saw in the same strip a close-up of the plane that buzzed over the stadium.

CAB Circularizes New Safety Rules

Several innovations characteristic of the proposed revision of air traffic rules being circulated for comment by the Safety Bureau of the Civil Aeronautics Board.

It is in simple language, it aims at protection of the other fellow rather than the individual pilot, and it is sent to the industry, rather than first having been submitted to the Board for its approval. Moreover, it is the forerunner of other simplification of Civil Air Regulations. The proposed changes affect Part 60 of those regulations.

Headline—The Bureau set May 15 as deadline for the return of comment. Public hearings are to be held if necessary, but Safety officials feel that the new version will prove acceptable without much change.

The Board's general instructions, according to Jesse W. Lankford, director of the Bureau, was that the rules should be "substantially shortened and simplified," should be



Stuart G. Tipton

limited to regulations which purpose avoidance of danger of others, particularly by collision, and expedition of air traffic, and should aim at the protection of the lives and property of the public from careless flying "rather than to protect the pilot from his own carelessness."

Other Revisions.—In addition to the changes necessary to comply with these suggestions, Part 60, which had come to be a sort of catch-all, was culled of a number of miscellaneous regulations which are to be placed in other sections as further revisions of the Civil Air Regulations are made.

This means, obviously, that Part

GMC's Light Engine

General Motors Corp. has light-engine an experimental two-cycle, five-cylinder liquid-cooled engine that it says will be possible for light-planes. It produces about 200 hp.

Although ultimately the engine may find a place in general aviation, test planes in Detroit indicate that production will not be started in the early years of post-war activity, because of other GMC projects with higher civilian priority.

It cannot be adopted, even with feasible comment, until after these other changes have been made. Consequently the Bureau is proceeding along these lines while awaiting reaction to the program.

Objections.—Stuart G. Tipton, assistant general counsel at CAB, who helped draw the new version of Part 60, believes it meets most of the objections to the present rules, among them complaints that they are too numerous, too "tight," and too arbitrary.

In the view of the spectators has been the Aircraft Owners and Pilots Association. Comments also have been heard from the Air Transport Association, and the Air Line Pilots Association.

"Typical of the proposed rules is this one, 60.03, on reckless flying: 'No person shall act in such a manner as to endanger the life or property of another.'"

Minimum Requirements.—About everybody knows when he's heard "Minimum Requirements." The regulations 40.33 therefore would take the place of many specific restrictions now on the books. Among these to be eliminated are those governing minimum flight altitudes, forbidding flying in close proximity to other aircraft, and outlawing aerobatics except under specified conditions. Requirements of use of parachutes while performing aerobatics, use of parachute, and adequate fuel supply when operating under contact conditions, also would be taken out.

Emphasizing that "a lot of other changes are coming up before this one," Tipton and the Bureau plans to group in one place all regulations dealing in particular with the operation of private airplanes.

Little is to be done with the rules of the Civil Air Regulations, which he explains are "generally accepted." True, they are complicated, "but commercial flying is a complicated business."

Public Must Revise Ideas on Air Output

Wilson says 1944 output of 1942-type planes would total 167,000.

This year's aircraft production schedule is 50 percent over that of 1943 but WPB and the armed services fear the public will be disappointed when they see the planes that will be in use, not under. People like to read about increasing thousands of warplanes.

In a statement obviously intended to prepare Americans for the new production schedule, the program, as C. E. Wilson, chairman of the Aircraft Production Board, stresses that transfer output, which added up to thousands of units, will be cut back the year and more emphasis will be placed on combat planes, especially heavy bombers, including the B-29, and on new types yet to be introduced. Other sources said that Wilson made this will be extensively revised.

New Version.—Using a new device to drive home his point that weight is the true measure of production effort, Wilson illustrated figures to show that if we were now producing only 1942-type planes, the industry would turn out 167,000 planes in 1944. He gave only a round figure, "estimated over 100,000."

Average weight of airplanes, including spares, for 1941 was 4,440 pounds, in 1942 it was 5,110, in 1943, 5,830 and in 1944 the average weight is estimated at 10,000. Obviously the program calls for a great number of fighters and attack planes, and the average weight is less than the weight of many of the new fighters. It is known, although Wilson did not say so, that the armed forces still want many hundreds more than they can get of fighters of a certain kind.

Heavier Types Needed.—"Schedule for 1944" says Wilson, "have been arranged so as to place tremendous emphasis on most needed combat types. They are very substantially larger than the models they supplant. For example, in the schedule for January, 1944, there is a cut of 500 planes from previous programs, the 100 of which are obsolete tactical types removed from the program to permit acceleration of more important combat models. The same scheduling trend will persist through the year, ensuring leveling off in numbers, consistent with an accompanying continuation of the upward trend in weight and consequently in productive effort."



NEW PLANE IN COMIC STRIP:

The *Wack Tack* comic strip on Jan. 14 showed 200,000 Los Angeles citizens the new plane which they had seen fly low over a recent Army-Navy outdoor show. The answerer identified the plane as the new Northrop Black Widow. The captioned information Northrop had been permitted to release is that the P-61 is the largest fighter type ever built by this or any other nation.

THE AIR WAR

COMMENTARY

Strategic Bombing of Germany Rises to Pre-Invasion Tempo

Progressive destruction and dislocation of Reich's economic and industrial system is well on road toward completion.

One year ago at Casablanca an Anglo-American air offensive was ordered "to accomplish the progressive destruction and dislocation of the German military, industrial and economic system and the undermining of the morale of the German people to the point where their capacity for armed resistance is definitely weakened." Today as this offensive approaches cyclonic proportions, lane out for a bit of evaluation may not be out of order.

The RAF by Night—To the Royal Air Force Bomber Command fell the task of destroying German industrial centers, city by city. As Air Marshal Harris put it, "We propose to annihilate every center of enemy production. Forty are centers vital to the German war effort; fifty others

can be termed considerably important." The British Air Ministry announced the score for 1943 by stating that about 135,000 tons of bombs were dropped on Germany and an additional 19,000 tons on other targets in occupied territories. This was about four times the tonnage dropped during 1942.

Nine out of Germany's 21 major industrial cities (each with a population of a quarter of a million or more), were so severely damaged they are now liabilities. These include Cologne, Essen, Düsseldorf, Hamburg, Mannheim and Wuppertal, in which cities from 50 to 75 percent of the built-up industrial area has been devastated. Eight more cities are so badly damaged that for all practical purposes they have been

knocked out of the war. Six more cities have been so severely hit that one more full-scale attack on each will finish them off. Thus looks like progress, but ninety is a lot of cities.

The AAF by Day—The job of the Eighth Air Force was not to help the RAF knock out the cities faster, but to hit the key objectives of the Nazi war industry in daylight attacks. A good example of how the American effort supplemented that of the British in the smashing of the important Focke-Wulf factory in Bremen on April 17. In the heavy night attacks on this city by the RAF this factory had been razed. Forerunners of the Eighth Air Force caused such severe damage that reconnaissance photos showed very little attempt to restore the plant.

As these heavy blows by daylight increased, German defenses wilted. By July, the number of Nazi fighters, especially the fast, powerful interceptors, ME-109 and FW-190, doubled as compared with the first of the year. By the end of 1943, the air battles had become so desperate that the fighter force, including fighters and rocket-fitted twin-engine Ju-88s, ME-110s, 210s and 440s, had almost doubled again. This shift of air strength has had a vital effect on the Russian front, but, as the great air battle of Jan. 21 indicates, the defensive power of the Luftwaffe is formidable indeed. Not enough, however, to stop our attacks.

Knocking Out the Luftwaffe—An extremely important objective of the American strategic bombing effort has thus come to the surface. To achieve its goal of knocking out key industrial objectives without prohibitive losses, air supremacy must be gained. The entire aircraft industry need not be destroyed, but enemy fighter strength has to be cut down to a minimum. This can be done by smashing the fighter planes on the ground, by forcing them into the air and destroying them in combat, by knocking out the factories producing finished fighter planes, parts and subassemblies, engines and propellers, and finally by destroying the centers where fighters are stored, serviced and repaired. During the past six months, this complicated program has been in operation, and parts of it have had considerable success.

The End Not in Sight—However, a fair appraisal of results to date shows a long road yet to travel. Despite known production cuts by damage to the ME-109 factories at Regensburg, Wiener-Neustadt (three attacks), and Leipzig (two RAF at-



HOT RECEPTION FOR NAZI AIR RAIDERS:

The Navy has just released this spectacular photo taken during an Axis air-raid on a North African port. A U.S. landing craft, which had been honored by a Presidential citation for its part in the Sicilian invasion, is shown burning in the center, as Allied anti-aircraft fire is aimed at the Nazi planes.

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NEW HEADS OF NAVAL AIR FERRY COMMAND:

Chiefs of the recently announced new organization, the Naval Air Ferry Command, which will operate under the Naval Air Transport Service as an air wing, are Capt. John W. King (right) and Capt. D. P. Smith (left). The former will head the command, with Capt. Smith, director of V.A.T.S., under the chief of Naval Operations, supervising operations. Several thousand aircraft were delivered last month of the organization's existence.

tasks), and the FW-190 factories at Warszewitz, Kassel, Gumbelshausen (two attacks) and Muenzenburg, all of which cut single-engine fighter production in November several hundred units below schedule, the overall fighter strength was reported as 1,000 more than at the beginning of 1943. Attacks on the twin-engine fighter plants (such as at Augsburg, Brunswick and Halberstadt) have recently begun, and this will help as they increase in tempo, and previously damaged facilities are hit again as production begins to pick up (as in the case of the recent three-pronged attack in central Germany, which included Dehnbach, Gumbelshausen, and the last week in July and now attacked again with a heavier force, this factory has assumed new importance since the virtual destruction of the Focke-Wulf factory at Muelldorf in October).

Single Air Plants—The most prominent feature is the fact that American heavy bombers are now based in Italy, and thus many of the new aircraft factories and other aircraft production centers in southern and eastern Germany, Austria, Czechoslovakia and Poland are now within effective range. Lt. Gen. Carl A. Spaatz has been given overall charge of strategic bombing operations, and the forces at his disposal include the RAF Bomber Command (under Air Marshal Harris), and the American Strategic Bombing Forces (English in England under Gen. Doolittle, and Fifteenth in Italy under Gen. Twining).

The weapons include Lancaster and Halifax, Fortress and Liberator heavy bombers, and Thunderbolt, Lightning and the Merlin-powered Mustang escort fighters. This combined force is far and away the most powerful ever available to an air commander, and it will not be the fault of Gen. Spaatz if Germany is not dazed by the time the invasion begins, as a result of "round the clock" and "round the map" operations now in process of being delivered. This is one of the little items planned at Casablanca a year ago.

—NAVIGATOR



CARRIER'S "TALKER":

Soldiers published or referred to the "talker" aboard an aircraft carrier. This one, perched for action, is relaying the gunnery officers' orders to gun crews.

New Device Regulates Flying Boat Loading

Glass L. Martin develops "Hydroball" to speed, simplify operations.

An automatic weight and balance indicator, known as the Hydroball, which simplifies loading operations and reduces loading costs of flying boats has been developed by Glass L. Martin Co. The device is already in use on the Martin Mars, giant flying boat now in operation with the Naval Air Transport Service.

The device utilizes the hydrostatic laws of Archimedes, according to Martin engineers. A sort of super-accurate Pirouette's mark—the load box which is carried on the side of surface vessels—is brought inside the hull of the flying boat for easy reading.

Rapid and Accurate—The new device, Martin engineers explain, makes use of the fact that the distance from load to waterline (draft) of a boat hull is proportional to its loaded weight, and that the angle at which the hull floats is proportional to its loaded center of gravity.

The Hydroball provides rapid and accurate readings of draft and trim angle which can be quickly plotted on a calibrated chart in order to obtain loaded weight and center of gravity.

The instrument consists of a three-inch diameter standpipe installed near the bow, and another one near the second step. Small openings in the hull bottom admit water to the standpipes. The combination of restricted inlet and large standpipe diameters insures accuracy due to wave or slight pitching of the airplane while a reading is being taken.

How It Works—Each standpipe contains a float with a graduated rod which sticks up through the top of the pipe, and waterline readings are taken at the intersection of these float rods with the top of the standpipe.

The coverage of the forward and aft readings is proportional to the weight. The difference of the two readings is proportional to the trim angle, and hence to the center of gravity.

To find the loaded weight and the center of gravity, it is only necessary to plot the readings on a previously calibrated chart. Separate charts may be used for fresh water and sea water, or the same chart may be used with a collar on the standpipe that changes the reading level to correspond with variations in water density.

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Chamber Economic Group Studies Industry Views on Reconversion

Members of Development Council called on frequently by government officials for data on post-war production problems.

By SCOTT HERSHEY

Current thinking on reconversion problems, which the aircraft industry must inevitably face, is beginning to crystallize within the framework of the industry's only organized group giving attention to these vital matters.

While there is not yet unanimity of thought on such matters, as disposition of surplus aircraft, disposition of plant facilities not needed for peacetime production, retention of employees and the approach to post-war markets and domestic trade development, the views of aviation leaders in the industry as well as in

government are being aired, discussed and initial steps of progress are being taken through the Economic Development Council of the American Chamber of Commerce.

Planning.—Irving M. Taylor, of Douglas Aircraft, and chairman of this Council, has given considerable attention to such matters. Working closely with him are such men as S. W. Voorhes, of Lockheed Aircraft, Taylor's predecessor as chairman; James C. Williams, of Curtiss-Wright, vice-chairman; and J. Henry Smith, of Jacobs Aircraft Engine Co., deputy vice-chairman in charge of in-

dustry activities of the Council and Robert B. Lea, of Sperry Gyroscope, and M. W. Cobb, of Northrop Aircraft, Council deputy vice-chairman.

Was Production Peak.—It is significant to note that many government officials see far ahead of the aircraft industry in many phases of post-war planning and calls have been made on the Economic Development Council by some of these men to assist in the industry's views on the problems of reconversion.

Many top executives of the aircraft manufacturing industry see too involved in problems accompanying accelerated production schedules to give their personal attention to the complex questions which will have to be answered with the cessation of hostilities.

Headaches.—This does not mean that the industry is not cognizant of the problems which it has to face, but simply that wartime production headaches are still to be met. It is pretty generally recognized that the aircraft industry will be the last, or among the last of the war industries to get back as a peacetime business when the victory is won, a factor which complicates the situation further.

It is elemental, of course, that a strong air force must be backed up by a strong aircraft industry in peacetime or in war. In this connection, it is interesting to note the emphasis that Gen. Arnold placed on this in his recent report when he said it was basic air force policy to give the industry experimental and outstanding orders and that in contrast to foreign nations, of having two or more companies endeavor to develop the same general type, believing in competition and individual enterprise.

Education Job.—Taylor believes the industry has a big education job ahead of it to convince Congress and the people of the necessity of maintaining a strong aircraft industry, possibly with governmental aid for some time after the war's end.

Disposition of surplus aircraft and disposition of plant facilities which have been necessary to keep pace with the explosive expansion of the industry are two of the universal problems now facing aircraft executives.

Plant Disposition.—On the question of disposition of plants, plant facilities and equipment, much of it government owned, there are widely divergent views and it is no secret that aircraft companies are con-

vinced that the utilization of surplus aircraft is far ahead of the aircraft industry in many phases of post-war planning and calls have been made on the Economic Development Council by some of these men to assist in the industry's views on the problems of reconversion.

Defense.—The nation's defense organization, whatever it is after the war will certainly require considerable numbers of aircraft which will be immediately available. Taylor sees, further, use of aircraft by other government departments, including Agriculture and Marine particularly.

The third "concerning" would sit through some plans for other various public-supported groups, the schools will need aircraft especially if the annual ROTC plan becomes definite, and then finally down to the commercial markets.

Transportation.—Taylor believes the United States should provide Britain and other countries with planes immediately after the war, particularly the transports which will have available and which the British probably will not. He believes that in this way we may get an edge in many trade wars with our surplus aircraft and be ready with replacement when the time comes.

Test Pilot Record

More than 50,000 flights, covering 1,334,132 miles and 49,858 hours without a fatal accident, have marked up by Ed Douglas Aircraft test pilots in the last two years.

J. O. Morrison head of the Douglas flight section, reported to company and Army authorities that the record represented individual air tests averaging two and one-half hours per plane prior to military acceptance flights.

Among the flyers associated with Douglas are Ben Howard, chief trouble-shooter and co-developer of the "Second Way" program, Frank Pugh, veteran racing pilot, former airline pilot L. E. Hobbs, R. F. Redinger, W. H. Clark, John Carroll and A. J. Vascotto. Harry Ayle, for eight years personal pilot for the late Senator McNamara, wartime secretary of the industry, and the late Mike Nichols, former Navy pilot



BOEING'S P-51 MUSTANG PRIMARY TRAINER:

Delivered by Boeing Aircraft Co., Wichita, of the 5,000th Boeing P-51 primary trainer Taylor to the Armed Forces was made recently before Robert P. Patterson, right, Under-Secretary of War, and Lt. Gen. William S. Keadler, left, chief of Army production. Brig. Gen. Ray G. Harbo, supervisor of the Northwestern Production district, AAF, is shown occupying the left in the long line of Boeing trainers from J. E. Schaefer, Boeing vice-president and general manager.

He points out that the surplus planes may be put into various conditions, refurbished, rehabilitated and perhaps remodeled by the various aircraft companies and then sent into foreign fields. This would require many employees.

Service.—It would be necessary, further, he pointed out, for the companies to provide service and accessories for their planes, producing employment at the plants and abroad. Organizations abroad which have been flying Douglas, Lockheed, Curtiss-Wright or other American planes are getting good results and service, would this be in a mood to purchase from American aircraft manufacturers when it was necessary to make replacements.

In this connection, Taylor and others in some aviation circles, believe that planes made available to South American countries and China, for example, might even encourage the tremendous road construction and railroad building programs which will be a part of the post-war world. American aircraft might well provide the transportation which otherwise would move over feeble railroads at expensive highway.

Surplus Aircraft.—There seems little doubt there will be a great demand, which will seek to buy surplus aircraft after the war for a few cents on the dollar of original cost. Many influential leaders in aviation believe the industry should target these considerable efforts in favor of long-range possibilities.

It is beginning to be known generally that the aircraft industry, because of its unique set-up and great experience, will not have funds immediately after the war to meet offers of organizations with ample funds. Here is where government aid, of one kind or another, has been suggested in some aviation circles as a way to keep the industry on an even keel. This view is by no means unanimous in the industry, but it has been expressed by responsible executives.

The Economic Development Council is fully cognizant of the varied views of industry leaders on post-war problems, but the group does believe that the industry is making progress toward a united front on reconversion problems for mutual benefit.

New "Mustang" Excels In German Raids

Improved version winning high praise from British and U. S. Air Force Eyes.

Greater speed, longer range and a much higher service ceiling are outstanding characteristics of the new and improved version of North American Aviation's high performance P-51 Mustang, long-range fighter which is accompanying bombers deep into Hitler's Reich.

Press dispatches from abroad have frequently mentioned a new unnamed long-range scout fighter, generally known for weeks in aviation circles.



RED-HOT STEEL PROPELLER:

A worker in a propeller plant of Curtiss-Wright Corp. is moving a red-hot Curtiss hollow steel propeller blade from a rotary pit furnace into a quenching press for the quench hardening, a transfer which speedometers say must be made in twelve seconds. In the picture also, the blade will attain its final contour and then be quenched with water.

tion circles to be the new Mustang about which both British and American pilots have been enthusiastic.

The Mustang is powered with a Packard-built Rolls-Royce Merlin engine of 1,500 hp, with two-stage, two-speed supercharger. It has a four-blade propeller. The weight of the craft has been sharply increased from the approximately 5,500 pounds of the early version.

The original Mustang's rate was approximately 400 miles an hour, while the new models have a "400 mile plus" speed. Service ceiling has been increased from approximately 35,000 feet to well over this figure.

Despite the changes made, the Mustang retains its dual characteristics as a fighter-bomber and an escort fighter. The fighter can be modified quickly from high-altitude use to low-level air support for strafing, intruder, bombing, tanks and bombing. As a bomber, it can carry a 1,000-pound bomb load. In addition, the plane can carry extra extra gas tanks or a 500-pound bomb under each wing.

A single place job with armor plate for pilot front and rear, has leakproof tanks and bulletproof glass. It is an all-metal, low-wing monoplane, with single tail, and

Grumman Lauded

Grumman Aircraft Engineering Co. turned out more than 500 airplanes last month, more than any single plant in the country, it was revealed in a letter from Secretary Knox to L. A. Hawbel, executive vice-president, congratulating the management on the achievement. The letter added that "we confidently expect that you will increase your production further and that throughout the new year Grumman will continue to furnish more planes to our fighting forces than any other aircraft plant." The fact that Grumman is contributing more planes per month than any other plant was first reported by AVIATION NEWS several weeks ago.

with a conventional landing gear.

As an escort fighter, the Army revealed, it is capable of efficient operation for long distances and its most recent publication use on the historic attack on German aircraft factories did not represent its maximum made possibilities.

Only 4% of Planes Grounded for Parts

Level drops to 1.7 percent in one overseas theater, War Department reports.

Army Air Forces' aircraft grounded for temporary lack of spare parts in overseas theaters are at a record low of 4 percent, the War Department reports, at the same time giving credit to the workers in the aircraft parts industry.

In one overseas theater, only 1.7 percent of American warplanes are out of service for want of parts, a overseas operations problem for aircraft as well as other vehicles.

Low Law in U. S.—In the United States, the percentage of planes grounded because of lack of parts is at a new low—4.2 percent for tactical planes and 3 percent for trainers. The figure for domestic operations is higher than the overseas percentage for tactical aircraft because the latter are granted priority as supplies.

With accelerated aircraft production schedules for 1944, aircraft parts workers and their industry will have to keep pace with airplane makers to maintain their record.

84 Percent Early in War—The low percentages reported by the War Department are considered remarkable in view of the fact that the proportion of military aircraft grounded for lack of parts, ran up to 30 percent in some time and during the early months of the war. It was to meet this problem that the Air Service Command was organized.

With parts flowing steadily, the Air Service Command, by utilizing every modern method known and by introducing some innovations of its own has steadily reduced the number of blemish quere. To effect its improvement in aircraft supply, the ASC has set up the largest single system and telephone communication system in the world and has set up high-priority rail, sea and air freight transportation routes which extend to every Allied base around the globe.

Noorduyn Output Up

Production by Noorduyn Aviation Ltd., of Canada, last year, was more than twice that in 1943 and more than seven times the number in 1941.

The firm reported a new assembly

Keeping BOOST ON THE BUTTON!

The Simmonds-Hobson Automatic Engine Control

TAKE-OFF calls for split-second coordination of airplane, propeller, and engine controls. Climb at rated power...flight at cruising...all mean continuous adjustments of mixture, RPM, and manifold pressure which complicate a pilot's job.

Acting as a third hand for the pilot, the Simmonds-Hobson Automatic Engine Control supplies the pilot's task, and provides additional engine protection. Units now in production are designed to take over throttle and mixture during all conditions of operation. The Simmonds-Hobson Automatic Engine Control keeps "boost" on the button, and prevents mistakes which might spell disaster for the engine.

More advanced designs now under way extend automatic control to the propeller governor, spark, and other engine functions.

Simmonds Equipment Fits With Every Type of Allied Aircraft

Automatic Engine Controls • Governorless Propellers • Hydraulic Actuators • Self-Aligning Red-Red Bearings • Control and Fuel Cylinders and Valves • Fuel-Injection Controls • Equipment and Components for Hydraulic Systems • Spark Plugs



CATALINA CLOSE-UP:

Ornament trim of a landing gear wheel of a Catalina amphibious extended into a check pit at Consolidated Vultee's airplane ramp in San Diego.



SIMMONDS
DE ROCHESCHOUX INC.

10 ROCKEFELLER PLAZA, NEW YORK, N. Y.

CARTRIDGE ENGINE STARTER



The First Shot Fired

For Lightning-fast Getaways, Navy Fighters Depend on Breeze Cartridge Engine Starters



Operating on the same principle as the familiar spin-drive starter, the Breeze Starter spins engine over at 180 RPM, under 3000 thrust developed by slow-burning cartridge fuel. Manufactured under Collins Patents

THE first shot fired in modern aviation is the charge in the breech of a Breeze Cartridge-Type Engine Starter, spurring latest horsepower into instantaneous life, smoothly and without shock to engine parts. From electric to torque starters, these starters are rolled upon for quick getaways without the use of secondary starting equipment, out of the quoniam on flight decks

Simplicity of design and rapid construction make service problems virtually non-existent in the type of starter. Being as much as 10 lbs. the Breeze Starter also obviates the use of heavy starting batteries. Delivering more than a foot-TON of torque from a 3 oz. cartridge, Breeze is the accepted starter for the big fighter engines today, is ready for higher power of tomorrow

Breeze
CORPORATION, INC., NEWARK, N. J.

PRODUCTION FOR VICTORY • PRODUCTS FOR PEACE

peak in each of the last three months, and that output for that quarter exceeding the 1942 period by 35 percent.

Trainers—These figures include both the Harvard AT-16, all-metal advanced trainer type and the Norovian or UC-34 transport type of the company's own design.

Production of the latter type alone during 1943 was more than twelve times the number for 1942. With the exception of four delivered to Canadian Pacific Airlines, the Norovians output went to the United States Army Air Force.

Canada's Air Growth Parallels U.S. Gains

4,123 planes produced last year upsurge 40 in 1939.

The growth of Canada's aircraft manufacturing industry has been as less phenomenal than that of the United States, according to figures just released, showing that 4,123 aircraft, from trainers to four-engine bombers, were produced in the Dominion last year, compared with fewer than 40 airplanes in 1939.

Fewer than 5,000 persons were employed in the industry when Canada went to war in September, 1939, whereas today nearly 120,000 are working on aircraft, just over one percent of the population of the Dominion. In 1939, Canada's aircraft industry covered 534,800 square feet of factory space. Today, the plants occupy 14,000,000 square feet of floor space.

Trainer Output—Figures on aircraft production from the beginning of the war to the middle of 1943 (no figures available for the last half of 1943) show 3,260 elementary trainers were built during that period—de Havilland Moths, Fairchild Corsellas and Pilots—and 3,570 advanced trainers, including 1,059 Norovians, 51 Norovians, 101 Pioneers, 367 Mohawks, 1,250 Ansons, and 150 Lusards.

Service craft totaling 2,606 were turned out by the Canadian aircraft industry, including small numbers of Blackburn Sharks, Grumanns, Stearman flying boats, and DeLanes, as well as 75 Lusards, 69 Norovians, 169 Mohawks, 43 Canbans flying boats, 1,451 Hurricanes, 166 Waspden bombers, and 19 Mustangs.

Five Main Types—Since mid-1943, production has been more or less concentrated on five types of air-

craft with Lancaster four-engine bombers and Curtiss Fielders being added to those named above.

Over 500 British Fields

In 1941, Britain had seven airfields. Today she has more than 500. A chart of airfields shows all Britain to be a mass of scarlet dots, the British Isles having 500 or more, often so close together that they seem to merge into one. Actually, aggregate area of British airports is considerably more than 300 square miles.

Despite this, a number of additional airfields are being planned. Runways of nine-inch concrete or deeper have been laid many of them 3,000 yards long and 100 yards wide. These sometimes number four on each airbase, although the prototype airfield has three, forming a triangle, with a circular perimeter track five miles long.

Fuel, Ammunition Dumps—Over the airfields—average 100 acres

each—are scattered fuel, bomb and ammunition dumps, hangars and quarters, all widely dispersed to minimize bombing effect.

The entire construction program, a race against time and rapidly changing requirements, is directed by Air Chief Marshal Sir Claude-Philip Courtney.

Convair's Fort Worth Chief to Go Abroad

George J. Newman, manager of Consolidated Vultee Aircraft Corp.'s Fort Worth division almost since its operations began two years ago, will leave this month on a foreign assignment for the corporation.

Newman's special assignment, which is a military secret, will require several months. During his absence, C. W. Perille, of San Diego, Convair vice president in charge of manufacturing, will move his headquarters temporarily to Fort Worth and will direct operations there in addition to his other duties.



AAF's AUSTRALIAN REPAIR BASE:

Upper photograph shows interior of an engine overhaul and repair hangar operations in Australia. This is where engines are taken down, cleaned, overhauled and reassembled. Average time for the complete job is 30 days, but it can be reduced to seven days in an emergency. Below is the airplane building housing the repair and machine shops. The equipment in the structure is valued at more than a million dollars.

Sorrell Sees Overseas Airlines Skimming Cream Off Travel Market

ATA research and planning director predicts some first and second class travelers will shift to speedier air medium in first five post-war years.

By MERLIN MCKEL

A conclusion that overseas airlines should be able to effect a substantial penetration of the first and second class travel market during the five years after the war, with nine principal routes offering the most likely prospects, is reached by Dr. Lewis C. Sorrell in his latest post-war study.

Announcing his analysis in an immediate post-war period of 1940-1946, Dr. Sorrell, who is research and planning director at Air Transport Association, says:

"Including the two routes now extending southward from Miami to enhance North America, nine international routes can be drawn between United States and Europe, the Mediterranean region, Asia, South America and Australasia, which on the basis of pre-war travel and

trade, and post-war prohibitions, offer prospects of becoming commercially self-sustaining at an early date, and therefore are the principal ones to engage prior commercial interest."

Basic Wars and Subsidies—This is contingent on prompt determination of operating air-rights. He predicts early attainment of self-support "upon the absence of rate-war, and national competition in heavily subsidized transport."

His observations are contained in a study on airline passenger prospects in United States overseas trade. Recently Dr. Sorrell's own view, the report has gone to ATA members for comment. Last November they received a similar analysis by the research director on overseas air cargo prospects.

Daily Service—In the current study, he suggests that daily or even multiple daily air passenger service should be provided almost immediately after the war between New York and at least London and Paris, daily flights to Northern and Mediterranean Europe soon thereafter, and daily schedules "of the continuous trip type" to both east and west coasts of South America. Largest possible planes should be used, and operations should be established between coastal points and foreign destinations before direct overseas routes from interior districts are attempted, assuming the latter ultimately are sanctioned by national policy and international bargaining.

Service shortcomings have for passenger traffic the classification principle with differential fares, and airline overseas fares have averaged about ten cents a mile, or approximately a third higher than steamship first-class rates. Dr. Sorrell believes it practicable and desirable for overseas airlines to reduce rates at least to current steamship levels.

Costs Rates—"It may not be practicable," he writes, "to achieve that objective in the case of third-class ocean fares during the next five years, but present first- and second-class steamship rates should be within the capacity of airline enterprises."

Between the United States and Western Europe, over the North Atlantic, this would be about 7.5 cents per statute mile first class, and 5 cents per mile, second. To London

TEACHING Army Air Forces Cadets to Fly

The job of the civilian flight instructor is to teach fledgling Army pilots to fly. Aerodynamics, meteorology, engines, navigation, aircraft identification and other related subjects are taught to Army Air Forces Cadets in addition to the fundamental mechanics which every soundly trained pilot must learn.



Photographs made at Georgia Air Service, this, military aviation, the publication by Bureau of Public Relations, War Department, Washington.

Adequately equipped academic buildings, shops and hangars are maintained at the Primary Training schools of Georgia Air Service, Inc. Every fundamental in flying is imparted to the Aviation Cadet. Our flight instructors, ground school instructors, technicians and aircraft maintenance specialists are men who are seasoned in experience and competent to give the training which makes U. S. Army flyers the best in the world!

Through this long war even our veteran mechanics—both instructors and mechanics—have acquired valuable new experience. This will greatly benefit our services in commercial and private flyers after the war.



GEORGIA AIR SERVICE, INC.
ATLANTA, GEORGIA

Flight Controllers in U. S. Army Air Forces: Bennettsville, S. C., and Jackson, Tenn.



P-51 AT CONTINENTAL'S MODIFICATION CENTER:

Continental Air Lines disclose that its Denver modification center has finished a special job on North American P-51 Mustangs, the first time the center has

worked on anything but B-17 Flying Fortresses since it began operations in February, 1942. Work included installation of additional navigation equipment.



COAST-TO-COAST 50,000 TIMES:

United Air Lines' 50,000th coast-to-coast flight was completed this month without much fanfare, except when C. P. Lott, UAL's vice-president of design (left), and W. D. Williams, superintendent of eastern flight operations, certified the last week of Sweden's Joes Row. Joes rowed each week on the route when they became seafarers.

or Fries it would amount to \$270 for first-class passage, and \$175 second. **► Destination**—Dr. Sorrell does not overlook the possible reaction of passengers to this differential. "Is the only apparent difference is that one passenger has a berth while the other sits on speed and other aspects of service being virtually the same—patrons are likely to question the \$95 differential for a night's repose."

He suggests as a possible alternative, different classes of service in different planes, which might be accomplished on high density routes by scheduling two currents daily or perhaps three times a week. "One might be a sleeper plane operated at the highest speed, timed to serve business men in both countries, and carrying priority cargo; the second could be a comfortable daylighter, with reclining seats only, and alternative accommodations cargo."

► Equipment—Most equipment available for overseas operation after the war presumably will consist of converted or adapted military types, together with some new "civilian planes" already designed and built, which means there will be a probable preference for intermediate stop operations, through some of the points the United States in 1949 can barely fly. Traffic and distance will govern the size of plane required for a given route.

These various aircraft, he finds, excepting certain flying boat types, appear able to cruise at 218-230 mph, and have passenger accommodations from 25 berths or 44 seats up to 54 berths or 44 seats, permitting flexibility of cargo and passenger arrangement. And "with allowances for head-winds and other weather hazards, they should be able to maintain 15-18-hour scheduled service between the Atlantic seaboard of the United States, and London or Paris."

► Policies—This is the potential problem of overseas air transport for Dr. Sorrell sees it. He study, however, is by no means limited to these considerations.

It opens with an analysis of the general aspects of overseas travel to and from the United States, his volume and characteristics, marketing factors. He deals with currencies and their tendencies, cruise travel, routes, sources and destinations, its seasonality and other aspects. Much of the information he has assembled is in tabular form.

► Volume—He discusses airborne overseas passenger traffic of the United States. "It seems plausible that the total inter-continental airborne passenger traffic to and from the United States in 1949 can barely have exceeded 30,000 to 35,000 transits, and 50 to 60 million passenger miles. Total volume of traffic was not

more than 2 percent of the water-borne overseas passenger travel to and from the United States in 1937."

Subjects given detailed consideration in his study include civilizing factors in overseas air travel after the war, the period of rehabilitation and re-conversion 1945-1950, acceptable overseas travel of the United States in this period, the 1950's—after rehabilitation and re-conversion, consequences with transportation, and the question whether the former regional and route pattern of overseas travel will persist after the war.

Plane Seen as Factor In Canada's Expansion

CPA official problem vital role for aircraft in developing mineral resources.

By JAMES MONTAGNES

The airplane is seen as a "key factor" in Canada's post-war mineral expansion program by C. H. Dinkins, vice-president and general manager of Canadian Pacific Air Lines. It will be used more extensively, he told mining executives recently in Toronto, in prospecting and development, and "CPA is already planning the replacement of a number of its present planes with new equipment in order to handle this increased business more speedily and efficiently."

► Landing Fields—Among CPA's post-war plans for aiding mineral exploration with the airplane are the building of landing fields at strategic points mining points in cooperation with local interests, so that where aircraft, instead of pontoons and skis, may be used the year 'round.

Since the line is particularly interested in large plane development, it has been watching wartime developments in the shipping of dehydrated and fresh foods that will mean no mining area will be far removed from adequate food supplies. The company believes northern Canada's development depends largely on cargo moved by air.

► Local Routes—CPA also hopes to be able to establish local air routes from Toronto, center of Canadian mining financing, with northern Ontario mining communities. Before pointed out that 40 air services are now operating on new mining fields quickly after the war, and will only to reconstruction but to re-employment of air personnel as well.

Hearings Close on Applications For Denver-Los Angeles Route

Arguments of four airlines—all with considerable means—present knotty problem for CAB.

The task of picking one or more air services to serve the important Denver-Los Angeles route, hearings on which came to a close in Washington last week before a Civil Aeronautics Board examiner, presented a more knotty problem than arises in most such cases. Many issues are involved. Four airlines have applied for the proposed route, and the arguments of all seemed to be more than usually valid. The question of the "big" versus "little" carrier ran continuously through the proceedings.

Another problem—and one that has even more serious implications for the future development of air cargo transportation—was that of universal interchanges. Without adequate agreements and arrangements made in large, at each carrier seemed to feel—and had some substantiation for the argument—that if any other carrier were awarded the route, it would place it in an unfair competitive position.

► Four Lines Involved—Two transcontinental airlines and two regional lines are involved in the case. Transcontinental and Western Air are the only carriers that has applied for a non-stop Denver-Los Angeles route, although the other lines applied in the hearing that they would seek non-stop flights as well. TWA asked that its certificate for AM 44 be amended so as to include Denver as an intermediate point between Kansas City and Los Angeles, which the airline now serves by way of Albuquerque and other points. TWA also seeks to amend AM 44 to extend beyond Kansas City to Los Angeles, with stops at Denver, Las Vegas and Boulder City.

United Air Lines' application and that of Western Air Lines are identical in wanting to serve this route with stops at Grand Junction and Las Vegas. Continental Air Lines asks for these same stops with an additional one at Cedar City. **► The Big Traffic**—When most witnesses were agreed that from 80 to 85 percent of the passenger business to be generated out of Los Angeles would be of a through nature, the question as to whether a transcontinental or local carrier should give service is the remaining 15 to 18 percent was hotly argued. Con-

Monopoly

The question of airline "monopoly" is squarely up in the Civil Aeronautics Board, believes W. A. Patterson, president of United Air Lines. Patterson asserted he had no objection to monopoly if it were "good." Pointing out that most people are opposed to monopoly unless they have it, he said that where no competitive exists between various air carriers on certain routes, it is easy to cry "monopoly," whereas economic requirements may be such that traffic warrants one carrier service only.

"The CAB has been established," Patterson said, "to regulate and oversee the airlines, and so that the evils of monopoly do not exist." The question should be asked, he said, whether "monopoly" is good or bad. "If there is anything wrong with it, it is the lack of the CAB, which is every authority to examine, high standards and eliminate evils."

Continental's witnesses asserted that they had no desire to become transcontinental operators, but were in a position to provide service throughout the northwest region, as it is defined by the Federal coordinator's report. This airline submitted, on an economic basis, that on this route would go most of the way in taking Continental out of the subsidy claim, under which it now operates, and into the compensatory 0.3 mill per pound mile rate.

Western Air Lines also argued that the Denver-Los Angeles route would help lift them out of the situation they now find themselves in—being on the borderline between "local" and "transcontinental" status. Deregulation, executive vice-president, pointed out that the recent CAB order reducing Western's mail compensation to 0.3 mill per pound mile was produced on an estimated net operating profit for the company of \$100,000. Before taxes, Dwell-Kille said, the company's 1943 net

income will be only \$300,000. If any other carrier were awarded this route, Western would have to ask CAB for \$100,000 per year extra on their mail rate per, he added, pointing out that their present route from Salt Lake City to Los Angeles would "die on the vine." Thomas Wolfe, in-the-vice-president of the airline, substantiated that statement with his opinion that the operation of the Denver route by any of the other carriers would mean "slow death by strangulation" for Western Air Lines. **► Restrictive Compensation**—Western's testimony was built largely on the restrictive competition which they foresee. Although some participants in the proceeding characterized Western's attitude as being "up against the walling wall," others thought that this testimony might hold some weight with the board particularly in view of some of its recent decisions. The Mount-Key West route, in which National Air Lines was awarded a temporary certificate was a case in point.

In its opinion, the Board admitted that Eastern Air Lines was undoubtedly in a position to give more immediate service, and with less ma-



CONFIRMED FOR CAB:

Former Senator Josh Lee spent a red letter day last Monday. He took the oath for six more years as a member of the Civil Aeronautics Board, it was his first wedding anniversary, and he received a letter saying his entire herd of cattle in his home state had weathered a snowstorm.

regulations to its present schedules. They awarded the route to National, however, although it will necessitate an extensive revision of the line's schedule and maintenance facilities, painting out that National's operations were primarily directed to meeting local needs, whereas Eastern has to meet the demands of long-haul traffic.

Sympathy Case—In anticipation of possible thinking along these lines on the part of the Board in determining the Denver case, W. A. Patterson, president of United Air Lines, dubbed Western's situation as "a sort of sympathy case." The CAB is charged with the responsibility of building a sound and logical air transportation system, he asserted.

It would be too bad, Patterson continued, if it were to come the country finds itself operating under an illogical pattern of airways, "because five men once had too much sympathy." "Are we going to build up an air system designed to satisfy sympathies and individual ambitions, or a sound system?" he asked.

Correction—When the Salt Lake City to Los Angeles route was established, the CAB did not equal, and the open side was to get the most thorough, according to Patterson. The difficulty of getting over the mountains with the equipment then available was one of the chief

Expansion

United Air Lines will buy 47 DC-4's and 39 DC-3's or other one-engine planes in the few years immediately following the war, says President W. A. Patterson. Further United's plans will include a substantial increase of United's communications and navigation systems.

Factors involved United's witness testified that there was now an opportunity to correct this illogical route lay-out, instead of continuing on the unimproved basis of a decision made in 1936.

Patterson said he would "feel bad" if he felt that (the granting of this route to United) would destroy Western. "He called the company's attention, however, to the fact that it has often admitted that it was a north-south carrier, and admonished Western to recognize the size and scope and needs of the communities it serves and not try to build a transcontinental operation. On the question of whether all carriers should be out of the subsidy class, Patterson stated that by taking the three or four remaining out of that class, in some instances it might

mean putting all airlines back into subsidy.

Tail Wagging Dog—The Denver-Los Angeles route was characterized by Patterson as being the outstanding case of a section of a route being more transcontinental than local, or, as referred to by TWA's executive vice-president L. Lee Dierkette, it is a route, which if granted to other than a transcontinental carrier would mean that a "regional dog" would wag a transcontinental dog.

TWA's case was based on two main points. The company claims that now having the "shortest, best cut" route coast-to-coast is its only competitive advantage over American and United. The airline feels that it is now hindered in by these two competitors, with United having dominance in every West Coast city, except Los Angeles, according to Vice-President Charles Gallo, and American in a similar situation in every important city on the East. On the other hand, Gallo testified that granting this route to TWA would have less discriminatory effect on the other lines, as it is only one route shorter than TWA's present route. Interchange—United will win this case, even though it loses its application, Gallo stated, if that of either Continental or Western is granted. The granting of this route to any of these three carriers would be disastrous to TWA, the witness asserted, but particularly if given to Continental, as that company would parallel TWA's route between Kansas City and Los Angeles as well as interchanging with United at Denver.

The problem of interchange was injected continuously into the proceedings. Although Western had testified that its former interchange arrangement with United at Salt Lake City had worked well, the witnesses for United were not quite so enthusiastic, although their opinions were

directed at the basic ends of the mission rather than in criticism of Western. Ronald C. Gray, United vice-president in charge of traffic and Executive Vice-President J. H. Herdity both asserted that it was a poor second choice to one-carrier, one-class service, and W. A. Patterson went even further in stating that it would be an "outstanding decision of CAB."

Essential—Western's Lee Dierkette, defending interchange, pointed out that as air commerce is so important, interchanges are going to be an absolute essential, with rules prohibitive if unfolding takes place at every airline junction. Thomas Wolfe substantiated this opinion and declared that even without consideration of air freight, "interchange is the answer if airlines are going to compete successfully with other forms of transportation." Both witnesses testified that there are no surmountable difficulties to interchange that cannot be solved by mutual cooperation of the parties concerned.

Donald Boninger, Albert F. Bell and the four sidesmen on the panel, to which he belongs, and asserted that the examiner's report would be issued within a reasonable time thereafter.

American Airlines, although an intervenor in the case, did not appear.

Approval of Heavier Airliner Loads Seen

CAB sees bearing on proposal to increase permissible weights of Douglas and Lockheed.

The study of a deadlock between the Civil Aeronautics Board and the Air Line Pilots Association is behind the Board's announcement that it will hold public hearing Feb. 4 on a proposal to permit commercial air transport to operate at increased weights. Chances are good for approval of heavier loads.

The change would require amendment to civil air regulations. One question is the advisability of increasing takeoff weight of the DC-3 by 1,300 pounds and its landing weight by 800. Another involves increase in both landing and takeoff weight of the Lockheed L-400 transport aircraft by 1,000. The proposals apply specifically to Douglas and Lockheed planes equipped with Wright G-202 or Pratt & Whitney S1C1G engines. The amendments would affect pas-



SERVICE RESUMED

Around service to Philadelphia, suspended Dec. 21 by CAB, has been resumed, with All American Airlines now using Washington as eastern terminus for its Pittsburgh-Philadelphia pickup route. All American is using the Shermansville Philadelphia Airport. Future shows Ray Morris, superintendent of air mail service, leading the first plane at Washington National Airport, with the assistance of Capt. Ray Welland, pilot.

61 T1 and 61 T13 of the regulations, which prescribe landing and takeoff weights of 24,400 and 25,300 pounds for DC-3 transports.

Misunderstanding—CAB officials say the changes would have been in effect long ago had it not been for a misunderstanding on the part of the pilots. The ALPA has opposed the increase since the board first proposed it last March. Board sources say the pilots did not realize the Board also was assuming no increase in power.

An ambiguous sentence in the description of the proposed amendment is said to have led to the misunderstanding. "It appears from the data now available," read the first announcement, "that the weights of DC-3 aircraft equipped with Wright G-202 or Pratt & Whitney S1C1G engines could be increased by 1,300 lb. for air level operation with progressively modified increases for operation at higher altitudes." This would require at sea level a takeoff runway 4,750 feet long. The 800-lb. landing weight

increase would imply a 3,480-ft. runway.

Load Factor—Official sources point out that two Wright models are built with 1,300 lb. higher than the one mentioned in the amendment, and Pratt & Whitney Wasp have the same power as the latest Wright engines.

With these installed in the DC-3s, they say, the 1,000-lb. increase in load factor easily could be made, without endangering the craft, depending of course on size of airport and altitude.

One of the main arguments by those who favor the change is that military operations by the Air Transport Command have proved effectively that the present restriction on commercial weight is too low and can be relaxed without hazard.

Burke Nails Rumors

Current reports that Tom Burke, who resigned recently as chief of State Department's international communications, might join Pan American Airways are without foundation, Burke says.

Speculation apparently was inspired by his views on international air transport, which have included a leaning toward the chosen instrument principle, favored by PAA. Burke reports it still has no definite picture and will not until after a vacation.

Few Navy Cutbacks

All war agency officials understand that the aircraft program as far driven up for 1944 is tentative, depending on the results of last year's Air Materiel Office. Official estimates of the cutback in major war production items, to be made at the time that the Navy director issues its report on the program, are being worked out.

There is disagreement among the budget estimates and the estimated outlay ranges from one-third to more than half of the present rate. It is reported, however, that the Navy does not expect any cutbacks in either planes or ships when the Navy budget. Actually, the Navy will then take up revised program in the new fiscal year, and any changes, considerable, will stop orders, will occur on the Army side.



JOINS UNITED'S 100,000-MILE CLUB:

Rep. Joe Martin (right), House Minority leader, receives a bronze plaque from C. C. Thompson, United Air Lines vice-president, as Martin becomes the 4,000th member of United's "100,000-Mile Club." Mrs. Franklin D. Roosevelt was the first member. The club, which is restricted to those who have flown that distance or farther on scheduled airlines, was established in 1948.

Financing

Western Air Lines plans equipment expansion of extension of its present routes are grasped. L. R. Dierkette, executive vice-president of the airline, says an Eastern bank has secured Western's President William A. Coulter's agreement to finance the airline's expansion to the extent of \$1,000,000. The bank is interested in Western's development.

Three Lines File Amendments On Great Lakes-Florida Route

Eastern Air Lines, Colonial and South East get changes on record before deadline set by CAB Examiner Newman.

By BARBARA FREDERICK

Eastern Air Lines, Colonial Air Lines, and South East Airlines, acting on an amendment of CAB Examiner E. J. Newman that no amendments to applications consolidated in the so-called Great Lakes-to-Florida proceeding would be accepted after Jan. 15, 1964, announced to their applicants as the record with the Civil Aeronautics Board shortly before the deadline.

Amendments to previous applications also were filed by Transcontinental & Western Air, Inc., and American Airlines by W. Higgins Airways and the Ryan Flight Service. New applications came from the Worcester Yellow Cab Co., Worcester, Mass.; Ray F. Owen Co., Portland, Me.; and John W. Foreman, Pocahontas, Okla.

Colonial—Although not yet consolidated with this case, Colonial's application, which requests service from Chicago and Detroit to Miami, was mentioned in preliminary conference and Examiner Newman said he would recommend that this be included in the Great Lakes-Florida proceeding. Colonial also asked for routes from New York City to Miami, via various intermediate points, but the examiner felt that this was outside the scope of this proceeding.

Eastern amended for the second time its application for service in this territory so as to include service between Knoxville, Va., Elkins and Farmport, W. Va., Pittsburgh, Pa., and New York-Newark, N.J., and to operate between Elkinsburg and Pittsburgh, also via Clarkburg and Wheeling, W. Va., and to operate between Pittsburgh and Philadelphia.

Amendments—Also for possible inclusion in the Great Lakes-Florida case was an amendment to another application by Eastern which added more cities on Routes 5 and 6, many of which were on applications at Eastern's request to this proceeding. This application has been contested by some airlines protesting its inclusion in this case.

South East Airlines (formerly the application of Robert F. and Hannah Turner) amended its application for several routes in this area, to add Princeton-Birmingham, W. Va., Athens,

it already serves. Eastern recommends the added Jay, and desires to provide, convenient, and reliable air transportation between various points now served on Route 10 and Route 5, and seeks these routes as an amendment to Routes 40 and 5, or as a separate route. The airline stated that if Route 48 were amended, it would be willing to have a restriction of its certificate against operating through flights on Route 48 between Birmingham and Chattanooga or points beyond Chattanooga. This new application, for which Eastern requests immediate hearing, will "integrate Eastern's system into a cohesive operating unit and further extend out as adequate transportation system in the southern territory now served by Eastern," according to the company.

Consolidation—Eastern was heard from still further in an amendment filed with the Board to include Ottawa, Canada, as an additional terminal beyond Syracuse, and to include Washington, D. C., as the northern terminus of part of a proposed application. The route would run from Washington, D. C., and Baltimore to Ottawa and Montreal, via Reading, Scranton, Wilkes-Barre, Pa., Hinghamton and Syracuse, N. Y.

For consolidation in the Chicago-New York action served from Twin Cities-New York applications, TWA asked for an amendment to its application which proposed extending its Chicago-Detroit route to Detroit, so as to extend that route from Chicago through to New York, via both Detroit and Cleveland in the preliminary conference on this matter, Examiner Francis J. Ryan said he had no objection to the inclusion of TWA's amended application in the proceeding.

Alternative—Mid-Continent Airlines added an alternative to its proposed route from Tulsa to New Orleans. This route would run from Kansas City to New Orleans via Springfield, Mo., Little Rock, Ark., Monroe, La., or, as an alternative, Fort Worth, Miss., Hattiesburg, Miss., and Bogalusa, La. The company asked in addition to give service between Tulsa and Little Rock via Minneapolis and Fort Smith, Ark.

W. Higgins Airways added several intermediate points on its requested route between Boston and Providence, and proposed also a route from Newport, R. I., to Black Island, N. Y. A previous application of Wiggins Airways, from New York, N. Y., was amended to ask permission to carry persons, property and

mail over a feeder line system of its routes in New York, Massachusetts, District of Columbia, Pennsylvania, Virginia, Ohio and Connecticut.

Feeder Lines—Other applicants were John W. Foreman, who asked for a route from Worcester, Mass., to South Lake, Lake Louise, B. C., and for four routes within Idaho and to Spokane, Jackson, Wyo., and Elko, Nev. Three of these routes would be feeder lines to one from Idaho Falls to Spokane. Ray F. Owen Co. proposed a route from Marshfield, Ore., to Portland via various intermediate points, carrying mail, passengers and property in scheduled operations from land points in Oregon and Washington.

Only common carrier heard from last week was the Worcester Yellow Cab Co., which asked CAB authorization for charter service carrying newspapers and express mail, as persons and property over irregular routes from Worcester, Mass., and a 50-mile radius of that city, to all points in the United States and Canada. The company proposed an integrated schedule of flights, using "suitable aircraft, including helicopters."

Monro Decries State Rule on Air Permits

In his first speech in many weeks, C. Belvid Monro, president of Pennsylvania-Central Airlines, declared in Grand Rapids last week that "any restriction of power by state governments is the first step in the consolidation of the expansive business to be maintained by the taxpayers."

A little more than a month ago, PCA protested to Michigan state authorities that the action of the Michigan Board of Aeronautics in granting a helicopter route franchise to Great Lakes Skyways, Inc., Greyhound subsidiary, against it could not understand the reason for the "rush" to grant such a certificate when equipment was not available and the economics of the situation were still "open to considerable conjecture."

Changes Monro—In his talk to the Grand Rapids Chamber of Commerce, Monro declared that Greyhound "is seeking not to develop air service but rather to tear down a service now existing (presumably PCA, which serves several Michigan cities) and thus establish a monopoly of transportation in a section of the state. Having accomplished that, they will seek to extend this monopoly to other sections of the



AERONAUT SUGGESTION FOR THE FUTURE

The radical twin-boom design made famous by the Lockheed P-38 fighter plane may find its way into five family plane designs of the future, shown at the Detroit AAE meeting by William Hall, chief engineer of Aerovox, Middletown, G. Improved mobility would be a major factor in this four-place ship. Powered by two 75-hp internal combustion turbines, the plane would have a top speed of 165 mph, cruise at 150, land at 26. Cruising range would be 600 miles, and gross weight 2,200 pounds, of which 1,600 would be useful load.

UAL Spans Pacific 800 Times in 1943

Under its Air Transport Command contract, United Air Lines made approximately 800 trans-Pacific flights and 3,400 other flights in this hemisphere during 1943. Total mileage was 11,523,612, and loads exceeded 36,000,000 pounds on its domestic and overseas routes.

United reports that its ATC routes now amount to about 16,000 miles, or two and a half times its capacity by scheduled domestic mileage. Besides its ATC operations, United has a modification center for four-engine bombers at Cheyenne.

United Doubles Coast Cargo Service

Three months after it started its transcontinental all-cargo schedule, United Air Lines last week began a second daily round trip of the same nature, this time between Chicago and San Francisco.

Using DC-7s returned by the Army, United's new flight when westbound leaves Chicago at 11:30 p.m., arriving at San Francisco at 12:45 p.m. the following day. Eastbound departs from San Francisco at 11:15 p.m., with arrival in Chicago at 2:30 p.m.

Airport Work Pushed

Reports on airport development activity include recommendation for expansion of a field under construction at Pittsburgh, and award of a contract to start work on a port at East Boston.

Four recommendations have been advanced by Airport Advisory Group (Pittsburgh) through advisory committees for expanding the Moon Township airport near downtown Pittsburgh. 1) Ray more farm land to

Scorpions has
Bergen, chief
the Glenn L.
the Lawrence
This award
presented at the
given annual
vision made by

Institute of Aeronautical Sciences has chosen William Benjamin Bergen, chief night test engineer of the Glenn L. Martin Co., to receive the Lawrence Sperry Award for 1963. This award, which also will be presented at the Honors Night Dinner is given annually for a notable contribution made by



a young man to the advancement of aeronautics. It was endowed in 1934 by the brothers and sisters of Lawrence Sperry, inventor and pioneer aviator, who was drowned in the English Channel in 1933 after making a forced landing on the water.

Bierga has been chosen for his work in the theoretical and experimental studies of dynamic loads on airplanes. A graduate of Massachusetts Institute of Technology, the scientist received his doctorate degree in 1954 from the Massachusetts Institute of Technology's engineering department. He joined the Ames Research Center in June, 1957, and worked on static tests and general stress analysis for six months, when he was assigned to the newly formed vibrations department. He has been in charge of the vibrations engineering in charge of the propulsion, rotor and dynamic loads work and has been in charge of the vibrations laboratory and of experimental and development work on instrumentation. He is now also in charge of the engineering work in connection with the flight testing of the competing airplanes.

La Robert A. Gosses, formerly at the Newport Army Air Base, Del., has become Chief of the Maintenance Division of the Air Cargo Depot Detachment at Persimmon-Controll Air Base, succeeding Capt. George R. Doolley who has been transferred to LeGrand Field, New York. Capt. Doolley was accompanied to New York by four civil service employees attached to the Depot: Nick Lyman, Lou Sauters, John Kalpin and Charles Wilson.

Two new vice-presidents were announced by the Westernhead Co., Cleveland. The newly created post of executive vice-president is filled by H. I. Lewis (photo), vice-president, director and a member of the executive committee of American Hardware Co., and



Wright has been appointed project coordinating engineer of Douglas Aircraft, to handle plans and suggestions for new and modified types of planes, coordinating them through various engineering departments. He joined Douglas after his graduation from Wright School of Aviation in 1935 and recently has been head of the weight control group.



K. E. Sutton, left), with Wright Aeronautical Corp. since 1959 as assistant factory manager, production manager and general superintendent of its plants in the Paterson, N. J. area has been named manager of the Woodbridge, N. J., warplane engine plant. He replaces A. Ambrose, who has obtained a leave of absence due to ill health. Sutton will carry out all managerial functions and direct all operations and production. Concurrently, A. M. Schaefer (right), exper-



mental engineer with Wright for the past eight years, has been appointed engineering manager of the same factory, and will be in charge of administration and execution of all engineering functions. Scherer was a former test and field engineering expert for the company, as well as assistant experimental engineer and superintendent of the experimental laboratory.

Cdr Hollingsworth F. Gageby, Army Air Forces, has won the first Thomas II Base Award, according to an announcement by the Institute of Aero-



national sciences. The award will be given annually to an officer or civilian of the AAF Medical Command for an outstanding achievement in aeromedical development. (See 1.500000) will present the award (Jan 28) at the Honors Night Dinner of the Institute in New York City. Col. Gregory, who as project officer on helicopters has been largely responsible for the development of several types of helicopters, will receive this award "for his contribution to the military and commercial development and use of the helicopter." Gregory's work

career has been with The Air Corps and since 1993 he has been engaged in restoring wing aircraft projects. He is a pilot as well as an authority on helicopter operation and construction and has been a member of the helicopter team that flew the helicopter over the mall flight in Washington, August 1994. This month, a demonstration by Col. Gregory which included the first landing of the helicopter within a restricted space on the deck of a sailing vessel, led to definite plans for the use of helicopters in antiterrorism patrol. He is a graduate of Mustang College and attended the Air Corps Primary and Advanced Flying School at Brooks and Kelly Fields, and took a engineering course at the Air Corps Technical School at Columbus, Delaware.

Arthur G. Borge, executive assistant to United Air Lines, Inc., and 15 years in the air transport industry, has resigned to associate with his brother Robert A. Borge, as a partner of Borge

Brothers, Insurance Brokers, in Los Angeles. Beggs' first aviation affiliation was with Western Air Express and he subsequently held executive as line positions in San Francisco, Chicago, New York and Cleveland.

Capt. Donald W. Darby (Naval Aviator), of the Ferry Service Command, and Lt. Charles Q. Hulse USNR, of the Traffic Procedures Section, have been detached from the division of Naval Air Transport Service, Navy Dept., for duty elsewhere in the NATS system. Director of NATS is Capt. D. E. Smith.



Harold M. Poyer, chief engineer at Bell Aircraft Corp., Niagara Frontier division, who was headed the job of designing America's first jet propulsion airplane. First flown Oct. 1, 1942, the fighter, powered by two jet propulsion units, has since made hundreds of successful flights.

Walter M. Handal has been appointed publicity and information director for



War Relict, Army & Navy Relict, Civilian Defense and on war bond drives. His headquarters will be at Beauff's home office in Dallas.

C. O. Swenseth has resigned as sales manager of the Lycoming division of Aviation Corp. after nine years with the company. He started his aviation career with Pratt & Whitney, some years ago, and had extensive airline experience with Eastern, NYRBA and TAT.

H. C. Tietzel, statistician for the Federal Reserve Bank of Minneapolis since 1939 and a member of the bank staff for 22 years, has been



surveys for the airline as part of the research program in the company's also for execution after the test.

W. F. Tomlin, Pennsylvania Central Airlines' manager at Chattanooga for more than a year, has succeeded Bill Ross as PCA manager in Birmingham. Mr. Ross resigned to accept a post in the engineering department of Hechtel-McCone-Farsons Corp. Before going to Chattanooga for PCA, Tomlin was manager in Knoxville for the airline.

Candy Doyle G. Deashe (visitor), has been transferred from the Bureau of Aeronautics to duty in the Planning Division.



department. He was assistant supervisor of fabrication just before his recent appointment.

Orest W. Nelson (right), manager of the Beaver, Pa., plant of the propeller division of Curtiss-Wright Corp. for over a year has been named manager of design planning for propeller production, with headquarters at Caldwell, N. J. He was formerly a consultant engineer to the Commonwealth Edison Corp. and other large manufacturing firms, chief engineer of design and manager of the Power Accounting Machine Corp., and superintendent of the Federal Engineering



Corp. Nelson has been appointed as plant manager by Austin J. Brooks (left), who joined Curtiss-Wright last November. Brooks has a wide industrial background as an industrial steel and propeller expert. He was formerly president and general manager of the Meridian Manufacturing Co. and the Durham Manufacturing Co. At one time he directed a \$3,000,000 expansion project sponsored by DeSoto Plant Corp. and the Crucible Steel Co. for the enlargement of its steel mill processing.

James L. Kallay (left), division manager,



ger of Consolidated Builders San Diego plant, receives a 10-year service pin from Harry Woodhead, president. Kelley joined the old Consolidated Aircraft Corp in San Diego, Jan. 1, 1938. After receiving his pin, Kelley conferred a similar honor on Mike E. Taylor, transport supervisor who also has been with the company 10 years. In making the presentation to Taylor, Kelley recalled that when they first joined Consolidated the company "had another buildings on tools—only a government contract."

John C. Buckwalter has been advanced from assistant plant manager to plant manager of Douglas Aircraft's Chicago plant. He was formerly executive engineer and has had various other assignments with Douglas since he started in the company's engineering department. He has held division





Harold S. Wolf has been appointed Report Sales Manager for the Sperry Gyroscopic Co., a leading gyro manufacturer, most recent last week. Wolf goes to the Sperry company, 1740 E. 17th Avenue, Denver, to head the Sperry Aviation Export Corp., where he will be in charge of all general manager's duties.

Comdr. F. C. Ring, USN (retired), has been named as Navy member of the Working Committee of the Aero-Naval Board, having relieved Lt. Com. A. M. Blomberg, USNR.

Com. S. C. Ring, USN, deputy director of the Division of Aviation Training, ONDNI (Av), has relieved Capt. Frank T. Ward, Jr., USN, as director of the Division II as succeeded by Comdr. F. N. Keweenaw, USNR.

Leon Carl Joseph Wilson has assumed his duties as AAF representative at Pan-Am's Aircraft, Burlington, N. C. He has been at AAF Western Procurement District, San Angeles since 1942. During the last year, he was in the British Distinguished Flying Cross and the Cross de Guerre.

T. C. Davis, formerly sales manager of the industrial division of Dayton Rubber Manufacturing Co., has been named vice-president in charge of mechanical sales planning and experimental sales.

A recent addition to the staff of Sperry Gyroscopic's president, R. C. Gilliland, is Maj. Gen. George B. Bradley, made early aviation history when he sent the first radio message over transmitted from an airplane. He has recently been named as Inspector at AAF Headquarters, and was Commanding General of the 1st Air Force at Mitchell Field. He has also had commands at Moffet Field, Naval Field and MacDill Field, commanding the 13th Composite Wing, 1st Air Force, in 1938-1939. He was last chief of staff of the Military Intelligence from 1933 to 1935. In World War I, although a graduate of the U. S. Naval Academy, he served under the War Commander, and was promoted in the Air Force with the 17th Field Artillery. He received the Cross de Guerre with palm and also holds the Distinguished Meritorious Medal.

New assistant manager of Douglas Aircraft's Tulsa plant is E. C. McNeish, manager of the outside manufacturing division for all plants. Formerly a general superintendent of the Tulsa plant, McNeish went to

the Long Beach plant in a similar capacity before he was appointed outside manufacturing manager. He was given the post formerly held by W. G. Jerome, now plant manager.

New superintendent of students for Northwest Airlines is L. Sherman (Bud) Ross, formerly assistant superintendent of traffic for Atlantic Airlines. Before that he was with American Republics Aviation division of International Western Corp. and was based at Mexico, Brazil, as operations representative. A graduate of Boeing School of Aeronautics, Ross was with United Air Lines in the operations and passenger service departments for more than six years. In addition to his job as general traffic manager, he will supervise all station personnel pertaining to economy and food service.

C. B. (Bud) Fiedler, has been named area manager for United Air Lines' air cargo department for Colorado, Utah, Wyoming, Oklahoma, Texas, and a portion of Nebraska. His headquarters will be in Denver.

William F. Arnold, head of Delta Aircraft Co.'s Detroit office, also will be in charge of the new Chicago office opened at the LaSalle-Wacker Bldg., 231 N. LaSalle St. He will make his headquarters in Chicago, according to an announcement released by the Delta Aircraft Co. during the past week.

W. H. Heideck, formerly at Philadelphia State Hospital, has been appointed supervisor of Food Service for PCA.

M. M. Greer (left) and John T. Zalkus, Ryan Aircraft Co. production line executives, started this new year with new jobs. Greer, supervisor of methods engineering, will administer War Relocation job eliminations for Ryan while Zalkus, manager, to G. E. Ryan, factory manager, takes over his methods engineering post. Greer gave up his old company's management post in 1940 to join Ryan as a safety engineer. Zalkus has been with Ryan one year and formerly was



employed by Ford Motor Co., Chrysler Corp., and Goodyear Aircraft Co.

Edward H. Beech has joined the aircraft division of York Research Corp., as assistant to Ernest W. Scholten, vice-president in charge of engineering. Beech was formerly head of the design department of Pitcairn, Inc., senior research engineer for Lockheed Aircraft Corp., and was head of the department of aeronautical engineering at the University of Kansas. At York he will have charge of all design work on confidential aircraft projects. Concurrently, Albert S. Ogden was promoted from assistant chief engineer to chief of the development and research department where he will supervise the company's research projects.

L. Carl Jr. H. Van Lier, recently was elected for his work flying cargo to the armed forces in the Solomon Islands area widely known as one of the most difficult and hazardous for his service as a pilot with United Air Lines from 1938 until February, 1942, he received a leave of absence to go to the island of the Marine Corps. He is now in the command of the South Pacific Air Transport Command operating in the Solomon Islands.



Lt. Col. Van Lier successfully completed a cargo-delivery mission, delivering over eight tons of vital military cargo to his ground forces in the New Georgia area, in the face of heavy anti-aircraft fire, which was continuously directed at his plane. During the mission, the dropping plane, he showed not only complete disregard for his personal safety, but a high degree of courage. His conduct was in keeping with the traditions of the United States Army service.

New Plane Heater

The 44-passenger "traveling-baggage" gasoline-driven aircraft heater, announced in Detroit by Norgie division of Borg-Warner Corp., has operated at five miles altitude and at temperatures as low as 70 below zero, according to Northwestern University, where tests were conducted.

Post-war heating possibilities predicted by Howard Norgie, Norgie president, include use in homes. He says one of the tests would heat an average single-family home in coldest weather.

FINANCIAL

Preferred Stocks Expected to Grow In Favor in Airline Financing

Successful marketing of \$10,000,000 issue by United Air Lines believed to have strengthened that medium as means of raising funds.

By ROGER WILCO

The successful marketing of the \$10,000,000 preferred stock issued by United Air Lines may further enhance the medium of preferred shares as a means of future airline financing.

United is now the fifth air carrier to have a preferred issue outstanding. The other airlines are All American Airlines, American, Continental and Pennsylvania-Central. At one time, Chicago & Southern, Northwest and Inland also had preferred shares outstanding but have since retired those issues.

Equity Invested Preferred shares represent nothing more than an equity interest, i. e., ownership participation in the enterprise. They do not have the high position of a bond issue or other forms of secured obligations. Preferred stock owned by the investor, however, in that it usually represents the top equity issue and offers the promise of regular dividend income. The airlines have used convertible preferred shares to good advantage. This feature affords an opportunity for the preferred shareholders to participate in those profits accruing to the company which would ordinarily be available to the common stock. By converting at stipulated prices, a position in the common can thus be obtained. If the company is highly successful, reflection is found in the appreciation of the common stock—this important tangible value to the common stockholder is little or no earnings in the case, then the right to convert into common usually becomes an academic value.

Sinking Fund Provisions—Frequently, provision has been made for sinking fund payments designed to retire gradually the preferred shares outstanding. Where present, this feature can prove to be of strong underlying support.

With air transport securities remaining in public favor, considerable attention is attached to the industry's preferred shares. This is due largely to the conversion privilege present. Any upswing in the market price of the common convertible stock may be expected to lead to an immediate response in the price of the preferred.

Example—The price gyrations of Pennsylvania-Central \$125 preferred is an excellent example of this action. This stock sold as low as \$17 per share but once reached \$40 when sparked by the price appreciation of the common.

Table 1 presents the conversion portion of the airline preferreds. For example, until American Airlines announced \$70 per share in market price, the company's preferred, for all practical purposes, will be looked upon as returning an annual dividend return of \$4.39 per share and will be so evaluated in relation with other investment considerations. This means that if quality preferreds in the general market return a yield of about 4½ percent, the American issue may be expected to sell around \$110 per share. A premium will usually develop for preferreds as the price of the common approaches \$70 per share and will fluctuate in harmony with continued appreciation in the price of the junior equity.

Convertible at \$36—The new United Air Lines preferred will be convertible at \$36 per share for the common. This is somewhat removed at present and only slightly below the high of 33½ reached during 1943. It is interesting to observe that the United preferred received a 4½ percent dividend coupon. By comparison, American stipulated 4½ percent, Penn-Central an indicated 5 percent, All American Aviation, 4

percent and Continental, 3 percent.

The Continental preferred was originally maturing to the extent of 15,000 shares for a total par value of \$75,000. The entire issue was sold privately to Phillips Petroleum Co. in April, 1942.

15,000 Shares Issued—The Penn-Central preferred originally issued to the public to the extent of 15,000 shares, has since been reduced by 30 percent through conversion into the common. Considerable conversion has been forced by the management in selling the preferred at a low price which is less than the price for the holders to convert into common rather than accept the call price.

American continues to have the same amount—25,000 shares of preferred, as originally issued in October, 1940. There is no sinking fund in operation, nor have there been many opportunities to convert into the common on a profitable basis.

All American—While the All American Aviation preferred is convertible at the rate of five shares of common for each \$36 of preferred, the senior issue is not convertible as to dividends. In other words, if the company fails to earn its dividend in any period, it is not obligated to clean up this deficiency in subsequent years, before payments are made on the common. All the other airline preferreds outstanding are convertible as to dividends. There were 25,010 shares of All American Aviation preferred last reported as issued.

It is noteworthy that the United preferred, now issued in the amount of 100,632 shares of \$100 per value, will be financed by the common stockholders until such time as the additional proceeds can profitably be employed. In other words, the new funds, some \$10,900,000, are invested in U. S. Government, presumably yielding about 2 percent. Yet, the preferred pays 4½ percent. The duration of this disparity is dependent upon the rate of expansion of the airline, additional equipment and its acquisition by United for profitable utilization. In the interim, observers believe it may have been desirable for the management to obtain these new funds under prevailing favorable financing circumstances.

TABLE 1—Conversion Portion Airline Preferreds

	Common	Preferred	Dividend	Conversion
	Rate	Rate	Rate	Ratio
Continental	4.5%	3.0%	4.5%	1.5:1
American	4.5%	4.5%	4.5%	1.0:1
Penn-Central	4.5%	4.5%	4.5%	1.0:1
United	4.5%	4.5%	4.5%	1.0:1

NOTE: "Conversion ratio" is 1:1.00.

"The Numbers Racket"

THE AIRCRAFT INDUSTRY, Army and Navy, and the Government production agencies of WPB and ARCO should organize at once a convincing information program on our 1944 aircraft output. We must discount what T. P. Wright, Gen. Echols and C. E. Wilson call the numbers racket. The public is unimpressed with the mere substitution of "weight" for "numbers" in announcements because the character of the program changes has not yet been explained to its satisfaction.

Mr. Charles Wilson's statement on the subject last week is a good start but it does not give newspapermen the opportunity to ask their own questions, and settle their own doubts. Consequently, they cannot and will not write the stories which must be written if the country is to understand the aircraft production news of the next six months.

The information program would best be launched by a press conference for all working newspapermen—a few selected "guests," lagging columnists, or policy-making editors.

It should be made clear that we have been, deliberately, cutting numbers from our schedules for months to concentrate on heavier fighters, transports, and bombers. We cancelled months ago orders which would now be resulting in deliveries of 500 dive-bombers every month. Small trainers are being cut so heavily that if the slice were to be effective at once it would amount for cutting our monthly unit output by 1,000. No American, given adequate information, will expect us to replace those 1,000 trainers with as many superbombers next month.

Large monthly gains in numbers of planes are over. We may hover about the 9,000 mark for months. There may even be temporary decreases. We may not reach or exceed 10,000 this year.

We should combat in advance all informed publicists or unthinking critics who may win publicity within a few months because, using the numbers racket as a basis, we are not showing steady gains.

Luftwaffe's Doom Near

PERSONAL OPINION privately expressed in high government aviation circles in Washington holds that the Allies can beat the vaunted Luftwaffe in the ground in sixty more days of heavy bombing.

With the Nazi fighter force wiped out, we would have control of European skies and our invasion soldiers would attempt their landings free of resistance from the air. Without air support, and with the knowledge that they could expect none, the Nazi defenders would be deprived of a powerful offensive.

It was made clear that weather conditions now will not permit 60 consecutive days of heavy bombing, and that the total elapsed time may extend into the summer. As successful as the new infrared system for spotting unseen targets has been, it does

not end weather flying difficulties such as icing. Although our military officials do not underestimate the likelihood of new and important German secret weapons, they say that Nazi innovations introduced in the air war so far have been important more for their nuisance value, and their effect psychologically on our airmen, than on the damage done.

Almost all of the Nazi surprises have been introduced gradually before they were developed to the point of maximum efficiency. Thus, Allied armies do not overlook the constant possibility of improvements in "break" weapons such as rocket-propelled glider bombs, trailing bombs, and mid-air bombing.

The first German jet propulsion fighters have been expected to make their appearance as small numbers for months, and while one report from a neutral country indicated combat operation of such planes, it is believed that intelligence reports have not verified this. Both Messerschmitt and Focke-Wulf experimental rocket planes have been known to scout for months.

Despite popular opinion in this country, inspired by wide publicity, that the Germans have scored technical beats over the Allies with these spectacular ideas, our top airmen here are convinced that the present state of deterioration of the Luftwaffe leaves the Nazis too little time to capitalize on them in mass use.

Simpler Regulations

SIMPLER, NUMBER civil air regulations for private flyers have been demanded for so long that the proposed rules sent out by the Civil Aeronautics Board's Safety Bureau for comment last week are arousing wide interest.

Before 1937 civil air regulations were in such chaos that no one knew exactly what they were. In that year the Bureau of Air Commerce, predecessor of CAB, revised them. The change brought some semblance of organization but added so much legal phraseology and exact verbiage that the result was still the same—the average flyer didn't know what they were.

The proposed revision of Part 61, in the opinion of Stuart Tipton, CAB assistant general counsel, and Jesse Landford, director of the Safety Bureau, represents the most important change in CAB ever made. It is the first step to modernize, clarify, and simplify the rules of flight so they can be understood by the thousands of new flyer civil aviation has a right to expect after the war.

Some outstanding critics will say that the new drafts still fall short of the desired brevity and clarity. But the step is encouraging and CAB's Safety Bureau is showing that it is willing to constructive improvements. It awaits with interest reports from the field. If suggestions and comments fail to come in, the private flying organizations will have only themselves to blame for continued dissatisfaction. The next move is theirs.

ROBERT H. WOOD

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FOR THE AVIATION INDUSTRY